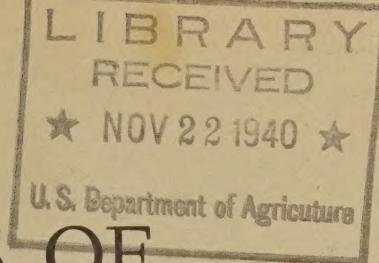


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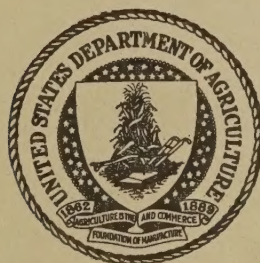
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ECONOMIC ANALYSIS OF THE FOOD STAMP PLAN

A Special Report

BY THE BUREAU OF AGRICULTURAL ECONOMICS AND
THE SURPLUS MARKETING ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE



Issued October 1940

UNITED STATES DEPARTMENT OF AGRICULTURE

A Special Report

ECONOMIC ANALYSIS OF THE FOOD STAMP PLAN

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This report is based on a study conducted jointly by the Bureau of Agricultural Economics and the Surplus Marketing Administration. It makes use of preliminary findings of a study of diets under the Food Stamp Plan that was made by the Bureau of Home Economics at the request of the Surplus Marketing Administration.

The initial procedure for the field work was developed by Norman Leon Gold. A. C. Hoffman, Norman Leon Gold, and Frederick V. Waugh were responsible for most of the analytical work, with the exception of that in the section called Effect of the Stamp Plan upon Diets of Low-Income Families, Dayton, Ohio, 1939 (pp. 66-79), which was prepared by Hazel K. Stiebeling and Sadye Adelson. In addition to the assistants to the staff in the field, a number of other persons in the Bureau of Agricultural Economics and the Surplus Marketing Administration helped in the preparation of the manuscript. Special acknowledgment is due to Robert E. Freeman, Herman M. Southworth, and Maxwell I. Klayman of the Bureau of Agricultural Economics; and Humbert S. Kahle, Gordon Straka, and Charles Ellison of the Surplus Marketing Administration. Preliminary drafts of the report were reviewed by Mordecai Ezekiel and R. S. Winslow, Office of the Secretary; O. C. Stine, F. L. Thomsen, J. R. Fleming, and Oris V. Wells of the Bureau of Agricultural Economics; and Milo Perkins, Philip Maguire, and H. C. Albin of the Surplus Marketing Administration.

Foreword

The impact of war on our agricultural economy has intensified some of the problems of basic readjustment that have been the main objective of our work during the last 7 years. In seeking wider foreign markets, agriculture has been faced with increased tariff barriers, national subsidies to encourage domestic self-sufficiency in importing countries, and subsidy programs by competing exporting nations, who, like us, are concerned with maintaining as large a share of the world market as possible. The further loss of foreign markets and the restriction of foreign purchasing power for food imports as a result of war have greatly heightened the intensity of some of the longer time trends.

The net result is that this country, failing the development of greatly expanded domestic markets, is faced with the possibility of a surplus situation much more serious than any we have previously contemplated. Agriculture's capacity has not been fully utilized for more than a decade. In terms of food, the Nation finds itself more than adequately prepared for the defense emergency. Our inability to make substantial headway in breaking down the barriers to wider international trade on a basis that is sound for farmers and the Nation as a whole means that our only alternative to drastic readjustments in acreage is an attempt to find wider internal markets.

In recognition of this problem, the efforts of the Department of Agriculture toward expanding domestic consumption have been greatly increased. Nearly 3 million needy school children are securing free school lunches through the locally sponsored free-lunch programs. This work will be increased to serve 6 million children during the coming school year. Families not yet covered by the Food Stamp Plan receive commodities donated by the Federal Government to State welfare agencies for distribution to needy families. Low-cost-milk consumption is being developed in connection with Federal marketing programs. The development of new uses for surplus commodities is being sponsored. The Food Stamp Plan is the latest and most promising mechanism by which we hope to be able to meet some of the challenges that the new conditions have created.

This report is concerned with economic and other aspects of the Food Stamp Plan. It was written initially for guidance in the administration of the program. Because of the wide general interest, it is now made available to the public.

MILO PERKINS,
Administrator, Surplus Marketing Administration.

H. R. TOLLEY,
Chief, Bureau of Agricultural Economics.

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Digest

The study here reported shows that farmers, low-income consumers, and food dealers would all benefit substantially from an expansion of the Food Stamp Plan. If the plan were made available to all relief and Work Projects Administration families in the United States, the cost to the Federal Treasury would be about 400 million dollars a year. A plan of this size would be very effective in moving surplus foods into consumption and in improving the diets of low-income families. The authors believe that a 400-million-dollar annual subsidy for a National Food Stamp Plan could increase the income of farmers by at least the amount of the subsidy, and possibly somewhat more.

These findings do not mean that the Food Stamp Plan is necessarily a substitute for other methods of farm relief nor that it should be considered to the exclusion of other methods of domestic surplus disposal, such as the school-lunch program and the Direct Purchase and Distribution Program. The report shows that in some respects full benefits of the plan were not being realized in the early stages of its operation and suggests some possibilities for improvement. On the whole, however, the plan seems to be working satisfactorily from the standpoint of all groups concerned, and a number of changes have been made to improve its operation.

OBJECTIVES OF THE FOOD STAMP PLAN

Price-depressing farm surpluses are coexistent with a situation in which millions of American families are receiving inadequate diets. The purpose of the Food Stamp Plan is to raise farm income and at the same time to improve the dietary standards of low-income consumers. In the distribution of food surpluses, it utilizes existing channels of food distribution, with whatever benefit this

may bring to those engaged or employed in the food industries.

The stamp plan seeks to achieve its objective by means of a Federal subsidy paid to low-income consumers in the form of blue stamps. These stamps can be used for the purchase of specified surplus foods in any retail-food outlet. As a condition for receiving the free blue stamps, consumers are usually required to buy minimum quantities of orange-colored stamps, which can be used for the purchase of any food product. The purpose of this requirement is to maintain the out-of-pocket food expenditures of participants, so that the surplus products bought with the free blue stamps will represent a net addition to their food consumption.

THEORY OF THE PLAN

It is generally agreed that the demand for foods as a whole by high-income consumers is more inelastic than that of low-income consumers since they respond less to price changes and may spend considerably more for a small supply than for a large one. What the Food Stamp Plan does in effect is to divert a larger share of the available supply from high-income to low-income consumers by means of the blue-stamp subsidy. To the extent that the demand of the former group is more inelastic than that of the latter, the effect of this diversion is to increase the combined food expenditures of both groups for any given supply. It is this increase in total food expenditures, rather than the amount of the subsidy as such, which is important in determining the increase in farm income.

The effect of the Food Stamp Plan on farm income will depend primarily on four things: (1) The amount of the blue-stamp subsidy; (2) the extent to which this subsidy represents a net addition to the preplan food

expenditures of the participants; (3) the elasticity of the demand of medium- and high-income consumers who do not participate in the plan; and (4) changes in marketing charges.

The more inelastic the demand of high-income consumers, the greater will be the price increase and the effect of the plan in raising farm income. If, however, the demand of nonparticipating consumers is highly inelastic, the price increase will be such that low-income families will be unable to obtain much additional food even with their blue-stamp subsidy. Actually, the benefits of the plan are shared by both farmers and low-income consumers; but for any given subsidy, the greater the benefits to one group, the smaller the benefits to the other.

If the total supply of the commodity is fixed and would be marketed through regular commercial channels in the absence of the plan, then the total marketing bill is not greatly affected by diverting part of the supply from one group of consumers to another. If there is no increase in charges for processing and marketing, the farmer will receive all of the increase in consumer expenditure attributable to the Food Stamp Plan, even though his average share of the consumer's dollar is only 40 to 45 percent. This increase in consumer expenditure may be greater under certain circumstances than the blue-stamp subsidy itself.

The farmer will not receive all of the subsidy, however, when the effect of the plan is mainly to increase the supply marketed rather than to raise farm prices—as may actually occur when prices are so low that part of the crop would otherwise be left unharvested. In this case, the plan will benefit low-income consumers by enabling them to obtain more food, but farmers will not be greatly helped unless the subsidy is sufficient to affect market prices. On the *additional* part of the supply which farmers will be able to market as a result of the plan, they will receive only that part of the subsidy left after the deduction of marketing costs.

In the long run, operation of the Food Stamp Plan on a national scale should make possible increased total production as well as higher prices. If operated in conjunction with a production-control program, the effect of the plan would be to divert a larger part of whatever supply was produced to low-income families, with increased prices to farmers.

With any given amount of funds, will the Food Stamp Plan raise farm income as much as, or more than, the same amount of funds used under the Direct Purchase and Distribution Program of the Surplus Marketing Administration? The answer to this depends on two things: (1) The quantity of food surpluses that can be bought; and (2) the extent to which the foods thus bought represent a net increase in the food consumption of participants. More surplus food can be bought with a given amount of money under the Direct Purchase and Distribution Program than under the Food Stamp Plan because, under the former, purchases are made direct from farmers or wholesale assemblers rather than from food retailers. But the benefit to agriculture depends on the effect on total food sales. No matter how cheaply a surplus-disposal program can be operated, the farmer gains nothing if the free food is merely substituted for food purchases which the recipients would have made without the program.

Where relief assistance is given in the form of grocery vouchers rather than cash, so that the preplan food expenditures of participants can be maintained under either plan, the direct distribution program may be expected to increase farm income directly more than the stamp plan with any given subsidy, because of its cost advantage. For the same reason, the direct distribution program would probably raise farm income by more than the stamp plan where cash relief payments are so small that the orange-stamp requirement must be dispensed with. Neither plan, however, is altogether satisfactory from the farmers' standpoint if no method is provided

for maintaining the normal food expenditures of participants. Where the orange-stamp requirement can be applied, the advantage of the stamp plan in maintaining normal food expenditures of participants is likely to outweigh its cost disadvantage from the standpoint of raising farm income.

SCOPE OF THE PLAN

As of July 1, 1940, the Food Stamp Plan was operating in 83 areas, with a total of about 1,500,000 consumer participants. The total cumulative value of the blue stamps issued up to that date was \$16,538,000. In areas where the plan is operating, the value of the blue stamps amounts to about 4 or 5 percent of total food sales.

Thus far, participation in the plan has been limited to persons receiving relief (including W. P. A. workers) except in Shawnee, Okla., where low-income employed families are participating on an experimental basis. In the first six cities where the plan was operated, ordinarily called experimental stamp cities, from 9 to 17 percent of the total population is eligible to participate, depending on the relief load. The experience to date indicates that about 75 percent of the eligible consumers may be expected to participate in the plan.

COMMODITIES PURCHASED WITH BLUE STAMPS

The proportion of blue stamps spent for the various commodities on the surplus list obviously determines the distribution of benefits among the various groups of producers involved. Up to December 15, 1939, approximately one-fourth of the stamps were used for butter and one-fourth for eggs. Cereal products (flour, corn meal, and rice) accounted for 10 to 17 percent and fruits and vegetables for about 33 percent. When pork was added to the list in December, it took about one-fourth of the stamps, apparently at the expense chiefly of butter, eggs, and lard. The proportion of blue stamps spent for each commodity will obviously vary with

the number and type of commodities on the surplus list.

The average per capita consumption of surplus commodities by participating families appears substantially higher than the consumption of these foods that has been reported for comparable nonparticipating groups.

PROBLEM OF SUBSTITUTION

For reasons already made clear, it is essential from the standpoint of the farmer that as much of the blue-stamp subsidy as possible shall represent a net increase over the former food expenditures of participants. The Food Stamp Plan seeks to maintain these expenditures in two ways: (1) By requiring that participants buy a minimum of \$1 to \$1.50 worth of orange stamps per person per week as a condition for receiving the free blue stamps; and (2) by giving larger quantities of free blue stamps with increased purchases of orange stamps. The minimum orange-stamp requirement was set at \$1 on the assumption that this was the average per capita food expenditure of low-income families.

Because of the way in which relief is handled in some cities, it was not desirable to use the orange-stamp requirement for all participants. As of January 1940, 60 percent of the participants were required to buy orange stamps; 18 percent were receiving their relief in the form of grocery vouchers rather than cash, so no requirement was necessary; and 22 percent (mostly in the South) were simply given the blue stamps because their cash-relief payments were so low they could not buy the orange stamps.

A majority of the people required to buy orange stamps were purchasing more than the required minimum. In May 1940, participants in 12 "stamp cities" were spending an average of \$1.06 to \$1.29 per person per week for orange stamps, with this figure tending to increase as the plan went along. In addition, they were, of course, receiving free blue stamps equal to 50 percent of the

value of the orange stamps bought, which made a total per capita food expenditure of \$1.60 to \$1.95 per week. There is reason to think, however, that the average preplan food expenditure of many of these participants was somewhat above the amount of the orange-stamp purchases, so that not all the value of the blue stamps may have represented a net increase in their food consumption.

Efforts were made in this study to measure the extent to which blue stamps were substituted for out-of-pocket food expenditures of participants, but the results were not such as to warrant any precise conclusion. In the judgment of the writers, based on first-hand observation of the working of the plan as well as on the available statistical evidence, a conservative estimate would be that about 75 percent of the blue-stamp subsidy represented a net increase in the food expenditures of participants. This percentage might be increased with certain modifications in the operation of the plan, some of which are already under consideration by administrative officials and are discussed later in this report.

SELECTING COMMODITIES FOR THE SURPLUS LIST

The basic authority under which the Food Stamp Plan is operated is such that the question of the particular commodities to be put on the surplus list is largely a matter of administrative discretion. In selecting commodities for this list, primary consideration should be given to commodities whose prices are most depressed, commodities for which the plan would be most effective in increasing consumption and improving the price situation, and commodities which offer the greatest improvement in the diets of low-income consumers, cost considered. Not enough is known about demand elasticities and consumption habits to predict accurately how the stamp plan will affect sales of individual commodities put on the surplus list. But it can probably be said with reasonable cer-

tainty that sales of commodities like fresh fruits, meats, and dairy and poultry products will be increased proportionately more than sales of commodities which low-income consumers are already buying in relatively large quantities.

The number and type of commodities on the surplus list will determine in large measure the extent of the gain to any particular group of producers. The shorter the list, the greater will be the advantage to those producers whose products are included, but the less will be the incentive to consumers to participate. If the list is lengthened, less control is possible over the allocation of benefits to any particular group of producers, although the benefits to agriculture as a whole will not be diminished if preplan food expenditures are maintained. If the surplus list includes commodities for which consumers normally spend as much as half of their food budget, then no special benefits will go to producers whose products are on the surplus list and no purpose would be served by having two kinds of stamps. The proportion of normal food expenditures represented by the surplus lists thus far designated under the Food Stamp Plan has varied from one-fifth for the first list to one-third for the later ones.

COSTS UNDER THE FOOD STAMP PLAN

A criticism sometimes made of the stamp plan is that it costs the Federal Government more to distribute surplus foods in this way than by possible alternative methods, such as the Direct Purchase and Distribution Program. Under the stamp plan, purchases of surplus foods are made by consumers in their neighborhood stores. Under the Direct Purchase and Distribution Program, commodities are bought by the Government at farm or wholesale points and transported to the State welfare agencies. Distribution to consumers is carried out by State and local relief agencies with the help of relief and W. P. A. labor. The difference, therefore,

between the out-of-pocket costs to the Government under the stamp plan and the direct purchase program will be roughly equal to the difference between the retail price and the wholesale landed price in car-load lots. For some commodities this cost difference may be as low as 15 percent and for others as high as 45 percent. Margin studies made by the Federal Trade Commission and others made in connection with this analysis indicate that for commodities on the surplus list thus far the commodity costs under the direct purchase program will average about one-third less than under the stamp plan. This cost difference is of course due mainly to the fact that the direct purchase program utilizes relief labor in lieu of the services of the wholesaler and retailer; and, as this labor would have to be maintained at public expense in any case, its employment does not represent an additional cost from a budgetary standpoint.

There is a rather widespread misunderstanding as to how the costs of the stamp plan are related to its effect in raising farm income. Because the farmer gets only about 40 to 45 percent of the consumer's dollar, many people have assumed that less than half of any Federal subsidy used for the stamp plan would go to the farmer. This is incorrect. What the stamp plan does in the case of most commodities is to divert a part of the supply from one group of consumers to another, without any large immediate increase in the total supply marketed or in the total marketing bill. If the total supply of the commodity is fixed and if there is no increase in unit margins with the increase in prices, all of the increase in consumers' expenditures goes to the farmer, regardless of how small his share of the consumer's dollar may be.

EFFECT OF THE PLAN ON RETAILERS, RETAIL MARGINS, AND EMPLOYMENT

Blue-stamp sales have amounted on an average to about 4 or 5 percent of total food

sales in the experimental cities. Even if these sales represented a net increase in food sales, it is evident that their volume is not large in relation to total food sales and hence would not be expected greatly to influence marketing costs or employment in the regular food channels.

The business done by means of the blue stamps is confined primarily to retail stores located in low-income neighborhoods. In the experimental cities, 5 percent of the stores are receiving about one-third of the blue stamps. For at least half the retailers the blue-stamp business amounts to less than \$60 per month; for others it greatly exceeds this amount.

The stamp plan does not seem to have led to any significant change in the margins charged for surplus commodities. In the case of "long-margin" items of which large quantities are not commonly sold, there does appear to have been some reduction in margins by some retailers when these were added to the surplus list. But on the basis of the experience thus far, it seems that the effect of the plan on margins has been negligible.

No significant increase in the number of persons employed in the regular food channels appears to have accompanied the operation of the stamp plan. Most retail and wholesale firms have been able to handle increases in business as large as those usually occasioned by the plan without hiring additional labor or adding to their physical facilities.

EFFECT ON DIETARY STANDARDS OF LOW-INCOME CONSUMERS

In August and September 1939, the Bureau of Home Economics conducted a study among 1,500 families in Dayton, Ohio, to discover what differences exist in the content and nutritive value of diets of families participating in the Food Stamp Plan as compared with those of their low-income neighbors not included in this plan.

The significant differences in the content of diet of participants and nonparticipants

were due to the higher consumption of eggs, butter, and fruit by participants, with a tendency toward slightly higher consumption of practically every item on the surplus list and of each major class of food.

The nutritive value of the diets of participants was significantly higher than that of nonparticipants for vitamin A and vitamin C and was more generous in every nutrient considered. The diets of participants and nonparticipants both needed reinforcement in calcium. The August-September surplus list did not include foods that make a significant contribution to the calcium content of diets; this could be obtained if the surplus list included milk in some form or more green, leafy vegetables.

PUBLIC REACTION TO THE FOOD STAMP PLAN

Since the expansion of any program in a democracy must depend upon the reaction of the people, the attitudes of various segments of the population are particularly important. A number of investigations by various agencies indicate that the stamp plan is meeting with widespread public approval. This attitude is not confined to any particular group; the programs appear to have the support even of those people not directly benefiting.

NATIONAL POTENTIALITIES OF THE FOOD STAMP PLAN

At present, nearly 20 million persons, including the families of W. P. A. workers, are receiving or are eligible to receive public assistance in some form. Assuming that 75 percent of these people would participate if given an opportunity, it would cost the Federal Treasury about 375 to 400 million dollars annually to operate the plan on a national basis for public-assistance cases.

If the plan were also to include employed families in urban areas with incomes of less than \$1,000 per year, an additional expenditure of 200 to 240 million dollars would be required. A program to make the plan avail-

able to all relief people and all employed low-income families (that is, those with less than \$1,000 per year) in both rural and urban areas would cost about a billion dollars.

A 400-million-dollar Food Stamp Plan would, by conservative estimate, increase farm incomes by 240 to 444 million dollars, depending on the elasticity of nonparticipants' demand for food. This represents a 4- to 7-percent increase in farm income from food crops.

These figures are based on the assumptions that participants substitute as much as 25 percent of their blue-stamp subsidy for normal food expenditures and that increases in marketing charges due to the increase in prices take one-fifth of the increase in total consumer's food expenditures, leaving only four-fifths to be reflected to farmers. If the degree of substitution is reduced or if marketing charges are not increased—both of which appear possible—the farm benefits would be higher than these estimates and, in the opinion of the writers, would be likely to equal or perhaps exceed the amount of the subsidy. Under the same assumptions, a 125-million-dollar Food Stamp Plan program would increase farm income from food crops by 1 or 2 percent.

For the commodities on the surplus list, larger percentage increases in growers' incomes would be expected in general. Estimates based on past distribution of blue-stamp purchases among the surplus commodities as compared with presumed "normal" consumption by low-income consumers suggest that under a 400-million-dollar plan, participants' expenditures would increase by at least 3 to 5 percent of the value of normal domestic consumption for rice and cabbage, 6 to 8 percent for butter and eggs, 9 to 14 percent for beans, lard, and various fresh fruits and vegetables, and 23 to 26 percent for prunes and raisins. The exact benefits to growers cannot be estimated, since they depend on the elasticities of demand of nonparticipants, a point on which there are no reliable data.

Surpluses, Nutrition, and the Food Stamp Plan

Agriculture since 1920 has been wrestling with surpluses and the problems they create. At the same time, there has been an obvious need for many of the supplies that agriculture had to sell.

In terms of the supply-and-demand aspects, a surplus can be defined as that part of the total supplies which, if removed or otherwise handled, would result in remunerative prices and grower income. Although there has been something less than unanimity on the basis for determining the existence of the surplus, as well as on the definition of the term "remunerative," and differing opinions as to the steps to be undertaken, national policy to alleviate the situation springs from this understanding of the problem.

Possibly, most people have been impressed by the existence of *physical* surpluses; that is, available supplies in excess of what can be marketed at any price (a positive price to growers which will cover out-of-pocket costs of harvesting and marketing). Such physical surpluses may not be typical of agriculture, but they are not insignificant. Each year the Crop Reporting Service estimates millions of pounds of edible foodstuffs reported to have been left unharvested "on account of marketing conditions."

In addition to these physical surpluses that are not marketed, there are other supplies which, though sold, have the effect of reducing agricultural prices and income to levels that will not allow producers to recover normal costs. Such a condition may exist for varying periods of time, and may be the result of temporary obstacles to orderly marketing, temporary or permanent productive overcapacity, or more fundamental institutional factors, such as the nature of the

marketing organization, the degree of competition, or, more importantly, the level and distribution of consumer income.

NUTRITIONAL DEFICITS AND AGRICULTURAL SURPLUSES

Although much remains to be known about nutritional deficits among various segments of the population of the United States, there is a fairly substantial body of knowledge to indicate that the problem is of national proportions. Possibly as many as 22 percent of our American children were suffering from some form of malnutrition before 1924.¹

Dr. Stiebeling has recently brought together other evidence of nutritional deficits:² Dr. Sebrell of the U. S. Public Health Service estimates that there were 100,000 cases of pellagra in 1937. Doctors in many parts of the country, report occasional cases of other deficiency diseases. Among these are nutritional nightblindness, because of insufficient vitamin A; beriberi, which follows a severe shortage of vitamin B₁; scurvy, caused by the lack of sufficient vitamin C; nutritional edema subsequent to insufficient quantity of protein of good quality, and nutritional anemia, reflecting shortage of iron in available form. Recently a new deficiency disease, ariboflavinosis, following a shortage of riboflavin (a part of the vitamin B complex) has been identified. Besides there still is rickets among too many children, and almost everywhere dental caries, which in part at least is a nutritional problem.

Chronic cases of pellagra, scurvy, and other deficiency diseases, may not be severe enough to cause death, perhaps not even severe enough to keep the patient in bed; nevertheless they are a definite

¹ LEAGUE OF NATIONS, MIXED COMMITTEE ON THE RELATION OF NUTRITION TO HEALTH, AGRICULTURE, AND ECONOMIC POLICY. FINAL REPORT. Pt. III, ch. 7. Geneva. 1937; Wells, O. V. AGRICULTURAL SURPLUSES AND NUTRITIONAL DEFICITS: A STATEMENT OF THE PROBLEM AND SOME FACTORS AFFECTING ITS SOLUTION. JOUR. FARM ECON. 22: 317-323. 1940; UNITED STATES DEPARTMENT OF AGRICULTURE. FOOD AND LIFE. U. S. Dept. Agr. Yearbook 1939: 97-402, illus.

² STIEBELING, HAZEL K. AGRICULTURAL SURPLUSES. DISCUSSION. JOUR. FARM ECON. 22: 337-339. 1940.

liability to working efficiency, they lower the body's resistance to infection and they reduce human happiness to a low ebb.

* * * * *

Food is but one of many factors affecting human well-being and its good or ill effects are often partially overshadowed by other circumstances. Nevertheless there probably is a connection between the various sets of facts. We know that food is the stuff out of which bodies are built, and it is generally accepted that natural resistance to disease—not resistance acquired—is dependent upon and varies with the nutritional state of the body. It may well be that for every person with an outright deficiency disease, there are scores, perhaps hundreds, that are not as fit physically as they should be, and do not have as much natural resistance to disease as they might have, because of poor diet.

* * * * *

There is, however, a positive side as well as a negative one to this matter of nutrition—good nutrition can improve the average, just as poor nutrition lowers the average level of living.

Long-time studies with small animals in which heredity and environmental factors can be controlled, demonstrate not only that defective diets lead to early signs of senility, other signs of poor health, or deformities; they also demonstrate that careful attention to all the now known principles of nutrition can lead to excellent vigor and vitality at all stages of development. Indeed, Sherman and his coworkers have found that diets already adequate to support a fully average level of nutrition and health, can be measurably improved to the benefit of the body. They estimate that by applying our present knowledge of nutrition to human life, a life span averaging 70 years could probably be increased to an average of 77, without further discoveries in this field. While longevity is not to be desired unless it can be accompanied by a high level of vigor, a prolongation of the prime of life, to this also better-than-average nutrition can contribute. Carefully controlled investigations indicate that increased physical efficiency, greater natural resistance to disease, and a prolongation of the prime of life with a higher level of vitality at every stage of development would follow a general application of our newer knowledge of nutrition.

The recent studies of consumer income and consumer expenditure carried out by the Bureau of Labor Statistics, the Bureau of Home Economics, and the Works Progress Administration, with the collaboration of the National Resources Committee, direct attention to the disparities in food expen-

ditures and quantities of food secured by various income groups in the United States.³ Thus, it was shown that more than 4 million families in the United States had annual incomes under \$500 in 1935-36. Their weekly expenditures for food were slightly more than \$1 per person per week, or about 5 cents per person per meal. Even after going into debt, the low-income groups spent about \$1.10 per person per week for food; those receiving incomes of \$1,000 to \$1,500 per year spent \$2.18, and those receiving \$3,000 to \$5,000 per year spent \$3.71 per week (fig. 1).

Preliminary studies indicate that in 1935-36 families receiving under \$500 per year made up 8 percent of all nonfarm, nonrelief families. They provided about 4 percent of the market⁴ (in terms of pounds) for butter, 5 percent for eggs, 3 to 4 percent for such vegetables as tomatoes and peas, and 5 to 9 percent for cabbage, onions, and dry beans. These families consumed about 2 percent of the oranges, 1 percent of the grapefruit, and 2 percent of the apples, according to this study.

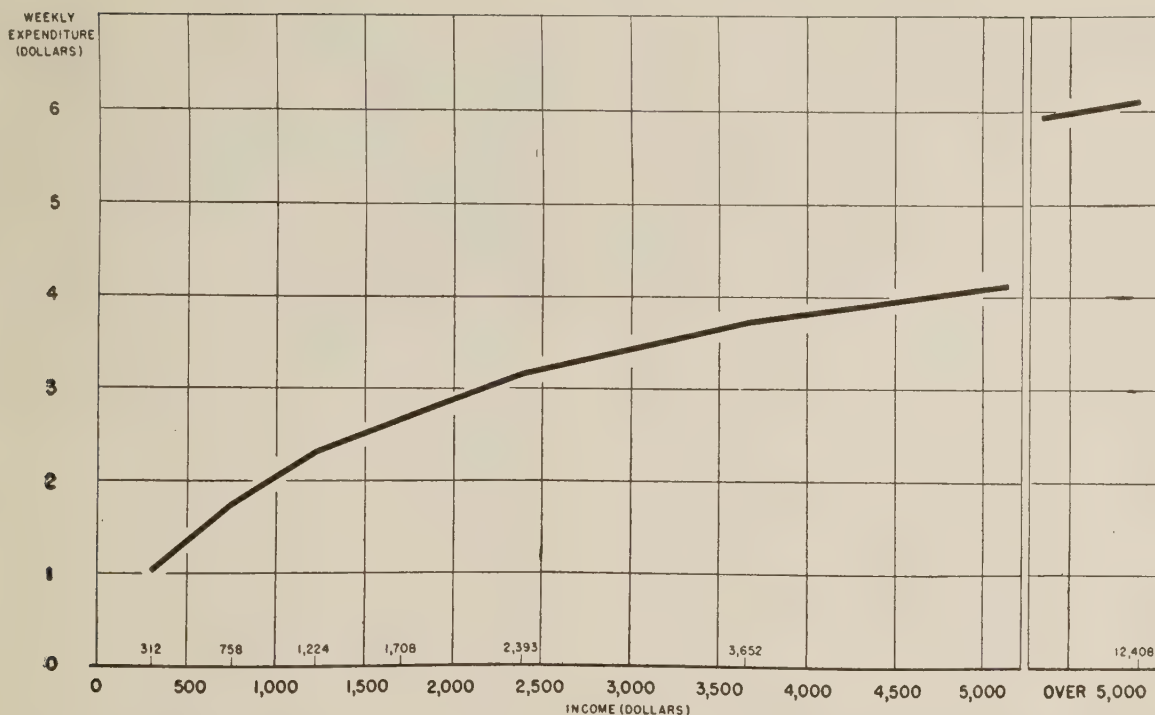
Dietary studies indicate that the chief differences between good and poor diets are in the protein, calcium, iron, and vitamin (A, B, riboflavin, and ascorbic acid) content of the foods included in the diet. Dairy products, eggs, vegetables, and fruits are particularly good sources of these elements. Moreover, consumption of these products expands very rapidly as food expenditures increase. The Food Stamp Plan seeks to stimulate consumption among the lowest income groups in the United States.

SURPLUSES, NUTRITION, AND AGRICULTURAL POLICY

The existence of surpluses and the recognition of the possibilities of real expansion in consumption may suggest a number of

³ See especially U. S. NATIONAL RESOURCES COMMITTEE. CONSUMER EXPENDITURES IN THE UNITED STATES, ESTIMATES FOR 1935-36. 195 pp. Washington, D. C. 1939.

⁴ That is, of the nonfarm, nonrelief market.



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FIGURE 1.—Relation between income and weekly per capita expenditure for food by families in the United States, 1935-36. Average expenditures of families in the successive income groups are plotted against their average incomes, indicated along the bottom of the chart. (Compiled by the Economic Analysis Section, Surplus Marketing Administration, from the study of consumer purchases in 1935-36 by the Bureau of Labor Statistics and the Bureau of Home Economics with the collaboration of the National Resources Committee.)

alternative possibilities. Conceivably, the Federal Government might take no action. But assuming that some action is considered desirable, there are several forms which it might take.

A substantial increase in national income, particularly if a larger proportion of the increase goes to low-income families, is probably the most effective solution of the agricultural as well as the nutritional problem. This is simply another way of saying that most of our economic problems do not exist when all of the economic groups are relatively prosperous. It also means that agriculture has a very direct interest in approaches to improved economic stability which, at short sight, do not appear to be agricultural.

Agriculture has its one-third of the "ill-housed, ill-clad, ill-nourished." Within

limits, one of the methods of meeting the surplus problem for one commodity or commodity group, which will also help to meet dietary problems of the farm population, is to encourage more production of protective foods among these groups for their own consumption. There appear to be rather large possibilities for agriculture in the South,⁵ as well as in other areas, in this direction. The Farm Security Administration has developed a program of this type in various parts of the country.

Export subsidies were considered a major possibility for attacking agricultural problems during the 1920's. These may be necessary and practicable for some commodities. Expansion of the domestic mar-

⁵ See STEANSON, OSCAR, and LANGSFORD, E. L. *FOOD, FEED, AND SOUTHERN FARMS; A STUDY OF PRODUCTION IN RELATION TO FARM NEEDS IN THE SOUTH*. 25 pp. Bur. Agr. Econ. (Farm Managt. Rpt. 1). 1939. [Processed.]

ket is a practical approach for many other products. Especially since 1932, agricultural policy has been broadened to include specific programs to increase domestic consumption of our surpluses. Among the major previous Federal efforts was the disposition of about 95 million bushels of wheat and 850 thousand bales of cotton, during 1932 and early 1933, which had been accumulated by the Federal Farm Board in its price-stabilization program. These supplies were donated to the American Red Cross, which was the only agency available for a national program of disposition of supplies to needy people. The Red Cross secured processed commodities by paying for the processing with a part of the raw material.

With the passage of farm-relief legislation early in 1933, disposition of surplus commodities through relief channels was considerably expanded. Though overshadowed in public notice by adjustment provisions of farm programs, donations of surpluses to needy people began on a large scale.

One of the least-known circumstances of the experience of 1933 is the fact that the edible portions of the hogs purchased in the hog campaign were processed into salt pork and byproducts. About 100 million pounds of salt pork were distributed to needy people by December 1933 as a result of the emergency purchases. During 1934 and 1936 a major drought-relief program involved the salvage of cattle, sheep, and goats for human consumption.

Since August 1935 activities have been carried on primarily under legislation which annually makes available to the Secretary of Agriculture a sum of money equal to 30 percent of the customs revenues. This may be used to encourage domestic consumption of agricultural commodities and the development of new uses for them, or to divert these commodities into export channels, byproducts, and low-price outlets. Additional funds have been made available for surplus purchases during the current fiscal year (1940). During the year ended June

30, 1939, the Surplus Marketing Administration purchased about 40 agricultural commodities at a cost of about 67 million dollars. These were donated to State welfare agencies for relief distribution. About 3 million families, or nearly 11 million needy persons, received about 2 billion pounds of foodstuffs as a result of the 1938-39 programs. The Direct Purchase and Distribution Programs are continuing.

A substantial outlet for farm surpluses is being developed in a rapidly expanding program to provide free school lunches to needy children. This program was started by the Surplus Marketing Administration in 1938. During 1938-39, as many as 900,000 school children in 14,000 schools received free school lunches, made up in part from the donated surplus products. By the end of the 1939-40 school year, about 2.5 million school children had participated. For the current year, a considerable expansion of this program is contemplated.

In addition to these activities to encourage domestic consumption, there have been a number of other relatively new or small-scale developments. Thus an effort has been made to increase the consumption of western pears in Southern and West Central States, where relatively small quantities of these pears had previously been sold. A subsidy payment was made on all shipments to these areas. The use of Puerto Rican coffee in the United States was encouraged by paying a subsidy on shipments to the mainland. Provision of low-priced milk for relief families is being encouraged through the establishment of a special price for milk for relief purposes in milk-marketing agreements, reduced charges for processing and distribution, and a direct Government subsidy.

The importance of expanding the domestic market for the agricultural products of this country has become more strikingly evident as the effects of war in Europe have become clearer. On an average, before this war about 45 percent of the prune crop was exported. About 30 percent of the raisin

crop was sold abroad. About 45 percent of the winter pear crop was exported, and 10 percent of the apple crop. Approximately 30 percent of the lard production was exported and 50 percent of the cotton crop. With the European developments the export sales for these and many other commodities have been greatly reduced, and the prospects for export sale under the older conditions of free international trade are extremely discouraging.

The Food Stamp Plan is the newest approach in the development of wider markets for agricultural commodities among needy people in this country. The principal objective is to raise farmers' incomes by increasing the demand for their products and to so use food surpluses as to improve the diet of undernourished families in this country. It seeks to achieve these objectives in a way that will receive general approval and contribute toward improved business conditions.

MECHANICS OF OPERATION OF THE STAMP PLAN

Underlying the Food Stamp Plan, therefore, are the following premises:

(1) Most of the relief families in the United States spend only 5 to 7 cents per person per meal for food—roughly, \$1.00 to \$1.50 per person per week.

(2) This is considered insufficient for procuring an adequate diet.

(3) The national welfare could be served by enabling these families to increase their food consumption.

(4) If this is done, a substantial improvement would simultaneously be achieved in the market for farm products.

BLUE AND ORANGE-COLORED STAMPS

The plan operates essentially by supplying to such relief families an added food-purchasing power in the form of free blue stamps, which they may spend in retail food establishments for any of a list of surplus foods. But it is desirable in many cases to safeguard this

subsidy against the possibility that families may substitute blue-stamp purchases for normal expenditures, thus in effect diverting funds intended to be spent for food into nonfood purchases. Various experiments have been undertaken in this regard in order to provide administrators with a variety of possible approaches.

In Rochester, the first "stamp plan city," families of relief clients, W. P. A. workers, and others certified by relief agencies have been allowed to participate in the plan only when they bought orange stamps to the amount of at least \$1⁶ per week for each family member. (Families wishing to do so are permitted to buy as much as \$1.50 worth of orange-colored stamps per person per week.) These orange stamps can be used in place of cash in buying any type of food. With each purchase of orange stamps, the family is given blue stamps in the amount of half the value of the orange stamps purchased. The object of the orange-stamp requirement is to assure that the family will maintain food expenditures out of its own pocket at the average normal rate, so that the blue stamps will really represent an increase in its food purchases.

In Birmingham, the experiment has been made of issuing blue stamps without requiring the purchase of orange stamps. Here, except in the case of W. P. A. workers, public-relief grants have been small, and it was at first believed to be neither possible nor necessary to impose such a requirement on relief families. Although W. P. A. families received sufficient cash income to enable them to buy orange stamps, the requirement was omitted in their case also, in order to provide complete economic and administrative experience with this mode of operation. Some persons interested in the program believed that it was not necessary to safeguard normal expenditures through the use of orange stamps, and Birmingham has been a test area for this thesis. Experience there

⁶ More accurately, 93 cents per person per week, since the requirement is based on \$4 per person per month.

has indicated that some safeguard is desirable, however, to assure increased food consumption through the plan.

In other cities, operation of the plan has varied according to the relief assistance granted. When food vouchers are issued to relief clients, the use of orange stamps is obviously unnecessary, since these vouchers automatically assure maintenance of normal food expenditures. In some such cities, welfare agencies now issue orange stamps in the place of food vouchers. Recipients of general relief in the form of cash, where their grants are small, may likewise be given blue stamps without having to buy orange stamps. All other public-assistance cases, however, are usually required to buy orange stamps in order to participate in the plan.⁷

SELECTION OF CITIES

Cities are selected for the program on the basis of cooperation by welfare and other public officials, banks, and trade groups. To obtain the plan, the cities must maintain a revolving fund to reimburse the Government for its payments of orange stamps presented. The cities, in turn, are reimbursed from the proceeds of sales of orange stamps. The affected areas must provide facilities for certifying and issuing stamps to eligible persons who wish to participate.⁸ In addition, the designated area must sign a contract with the Surplus Marketing Administration by which the welfare officials agree not to reduce public-assistance grants because of the operation of the stamp plan. In this way, the Department of Agriculture seeks to be certain that the stamp plan will provide additional purchasing power and will not simply result in a substitution of stamp funds for the local public-assistance grants. The contract entered into also provides for the preparation of reports that may be

⁷ The orange-stamp requirement is discussed in some detail on pp. 33-46.

⁸ In Rochester, for a number of reasons, including the desire to obtain full administrative experience, the Surplus Marketing Administration maintains stamp-disbursing offices. In all other areas, such offices are maintained by the local welfare department.

requested for the city or county area. Welfare agencies certify the eligible persons, but each eligible person has to decide whether he is willing to participate.

SPENDING AND REDEMPTION OF STAMPS

Stamps are issued in units of 25 cents. They may be used in any retail food establishment that wishes to accept them. Use of the stamps for beer, wine, or tobacco is specifically prohibited.

The blue stamps, which represent the contribution of the Federal Government in the program, may be used only for commodities specifically designated by the Secretary of Agriculture. The commodity list has been changed from time to time in accordance with seasonal and other economic factors. The first list included butter, eggs, white and graham flour, corn meal, dried prunes, oranges, grapefruit, and dry beans. On July 16, 1939, oranges and grapefruit were dropped and rice, fresh peaches, cabbage, peas, and tomatoes were added. Fresh pears were added on August 1. The commodity list was then unchanged until September 30, when peaches, cabbage, peas, tomatoes, and rice were dropped and raisins, apples, snap beans (for October), and lard were added. On December 15, oranges, grapefruit, pork, hominy grits, and rice were added. A number of additional changes were made in June and July 1940.

Stamp-plan participants may select any of the eligible commodities in any stores within the designated area. They pay for these with the stamps, supplementing their purchases, if they wish, with the cash or grocery vouchers they receive. The retail merchant places the stamps on especially prepared cards, which may be used in the following ways:

- (1) He may pay his wholesalers with them.
- (2) He may take them to the banks for deposit or collection. The banks in turn present them to the local office of the Surplus Marketing Administration for audit and payment.
- (3) He may take them directly to the office of the Surplus Marketing Administration for audit and payment.

At first, most of the stamps were offered to the banks for collection. With the encouragement of the Surplus Marketing Administration, however, an increasing volume of the stamps has been brought directly to its local offices for payment. Complete records are not yet available, but it now appears that banks will probably handle less than one-half of the redemptions and they will generally come from small, independent retailers. In Rochester, from December 16 to December 30, 1939, only 13 percent of the stamps were redeemed through banks, and more recently the proportion declined to about 8 percent.

THE LOW-INCOME PROGRAM

In Shawnee, Okla., a program was begun in October 1939 in order to gain administrative and economic experience in establishing a special means for increasing purchases of surplus products by low-income groups who are not on relief. A program had already been in effect in the county area (since August 23, 1939) in which persons receiving public assistance were allowed to obtain blue stamps for purchases of surplus foods.

Participation, of course, is on a purely voluntary basis. The first step in the new program was to determine what family groups should be eligible. After consideration of available information it was concluded that the plan should be extended to families whose total income from all sources did not exceed \$1,000 per year, or approximately \$19.50 per week. General studies by the Bureau of Home Economics among nonrelief city families indicated that about 70 percent of the families with incomes under \$1,000 had diets classified as poor. It was believed that assistance to such low-income groups would be of material help in improving the diets of these people and in providing a wider market for agricultural surpluses. Consequently, it was decided that the pro-

gram in Shawnee would be extended to these low-income families, after proper investigation and certification of the income of applicants.

A Certifying Committee was selected, which included a representative of the Shawnee Chamber of Commerce, assisted for a short time by a technical assistant of the Bureau of Home Economics, as well as the local representative of the Surplus Marketing Administration, who acted in an ex officio capacity. All certifications were approved by the Surplus Marketing Administration.

Weekly income was the controlling factor determining eligibility of applicants. A family was not certified if the weekly income exceeded \$19.50 per week, but adjustments were permitted because of seasonal employment, overtime work, or other unusual circumstances. In no instance was a family certified if the past 3 months' income had exceeded \$250. It was found desirable further to subdivide the low-income groups into those whose average weekly income was equivalent to \$14.42 or less (that is, below \$750 per year) and those with an average income of \$14.42 to \$19.50 per week. In the former case, it was required that orange-colored stamps should be bought at the minimum rate of \$1 per week per person for each member of the family if the applicant wished to participate. For each \$1 in orange stamps purchased, 50 cents in blue stamps, to be used for surplus commodities, were issued. It was provided that such families could purchase, if they wished, orange stamps up to \$1.50 per person per week and receive in addition one-half of the value in blue stamps. For families with more than \$14.42 per week and up to \$19.50 per week in total income, participation was based on the purchase of \$1.50 in orange stamps per person per week for the issuance of 75 cents in blue stamps. In no event was any family required to spend over 40 percent of its

income for orange stamps in order to participate.

Sale of the stamps to the low-income groups is accomplished by local banks, which contribute their facilities to the program. Thus it is possible for an applicant who has been properly certified to go to a bank office and make his purchases of stamps.

EXPANSION OF PROGRAM TO DATE

By June 30, 1940, the Food Stamp Plan had been announced for approximately 123 cities and county areas throughout the country. Operations had actually begun in 83 of these. As indicated in table 1, during June 1940 approximately 1,500,000 persons participated in the 83 areas. These people received about 3.2 million dollars in blue stamps during that month. From May 16, 1939, to June 30, 1940, the total expenditure for blue stamps amounted to \$16,538,000.

TABLE 1.—*Total value of blue stamps issued, number of people participating in the Food Stamp Plan, and number of cities in operation, by months, May 1939 through June 1940*

Months	Total value of blue stamps	Cumulative value of blue stamps	People participating	Areas in operation
<i>1939</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Number</i>	<i>Number</i>
May ¹	22, 473	22, 473	20, 958	1
June.....	101, 848	124, 321	50, 985	2
July.....	158, 455	282, 776	75, 668	3
August.....	285, 413	568, 189	136, 486	6
September.....	334, 944	903, 133	156, 339	6
October.....	371, 203	1, 274, 336	173, 878	8
November.....	481, 148	1, 755, 484	220, 648	14
December.....	833, 956	2, 589, 440	398, 853	19
<i>1940</i>				
January.....	1, 176, 843	3, 766, 283	569, 214	30
February.....	1, 745, 367	5, 511, 650	852, 857	38
March.....	2, 210, 602	7, 722, 252	1, 066, 851	53
April.....	2, 667, 051	10, 389, 303	1, 277, 282	62
May.....	2, 986, 686	13, 375, 989	1, 393, 324	71
June.....	3, 161, 982	16, 537, 971	1, 488, 532	83

¹ May 16–May 31.

Theory and Principles of the Food Stamp Plan

If we are to reach any clear and objective decision as to the merits or demerits of the Food Stamp Plan, we shall need three things: (1) A statement of the purposes of the plan, (2) an understanding of the principles underlying its operation, and (3) observation and study of the plan in actual operation in order both to check our reasoning about its principles and to provide a basis for quantitative estimates of how much it has accomplished and how much it might accomplish if modified or extended. This part of this report outlines the theory and principles of the plan and relates them to its objectives.

OBJECTIVES

It was shown in the preceding section that price-depressing farm surpluses are coexistent with a situation in which millions of American consumers are receiving inadequate diets. The purpose of the Food Stamp Plan, as well as other methods of domestic-surplus disposal, is to raise farm income and at the same time to improve the dietary standards of low-income consumers. That these two objectives are not inconsistent with each other and that increased farm production can lead to increased farm income if steps are taken to put a larger part of the supply in the hands of low-income consumers will be shown here.

The stamp plan offers the further possibility of providing low-income consumers with a reasonable degree of latitude in the selection of their foods, and, at the same time, of seeking to direct their purchases to those foods in which their diets are most deficient or of which the surplus is greatest. In this respect it occupies a position midway

between a cash subsidy to low-income families (only a part of which would be reflected in increased food expenditures) and a more regimented surplus-disposal system under which they would be given foods of whatever kind and quantity the Government chose to distribute. In the long run, a program that allows consumers some degree of free choice is most likely to encourage increases in the production of those foods that they want and need most and to discourage the production of commodities for which there are chronic surpluses.

Another feature of the stamp plan is that it seeks to utilize existing marketing channels for the handling of surpluses. In so doing, it adds to the volume of business done in these channels, with whatever effect this may have on the well-being of those engaged or employed in the food industries.

In the course of this report, the operations of the stamp plan will be analyzed in terms of these objectives. It must be recognized, however, that so long as the plan is operating on a small, experimental scale, its effect on farm prices and income is not measurable, although a basis is provided for gaging its ultimate possibilities in this regard. But before this can be done, it is necessary to understand the fundamental economic principles involved in the Food Stamp Plan and the way they are likely to work themselves out in the market.

DIFFERENCES IN DEMAND ELASTICITY FOR DIFFERENT INCOME GROUPS

The consumer demand for many food products—and possibly the composite demand for foods as a whole—is inelastic in the sense

that consumers will spend more total money for a small supply than for a large one.⁹ As marketing costs are relatively inflexible, the demand for agricultural products in terms of the price received by the farmer is even more inelastic than the consumer demand. One obvious way to raise the farmers' income, then, would be to reduce the quantity of foods produced or sold.

It is not so obvious, but is nevertheless true, that farm income might be raised by maintaining or even by increasing production, provided steps are taken to divide the supply differently between different groups of consumers. The explanation of this seeming paradox is that consumers react differently to changes in price, depending mainly upon their incomes.

Generally speaking, it is probably true that people whose incomes are low tend to decrease their food purchases more sharply when prices are raised than high-income consumers, and vice versa. In other words, people who can afford to do so will tend to maintain their volume of purchases regardless of the price and in so doing may spend more total money for a smaller quantity than for a larger one. Low-income consumers, on the other hand, are more likely to decrease their total expenditure for a commodity when the price is increased, and in the case of some commodities may not buy any until the price is brought within their reach.

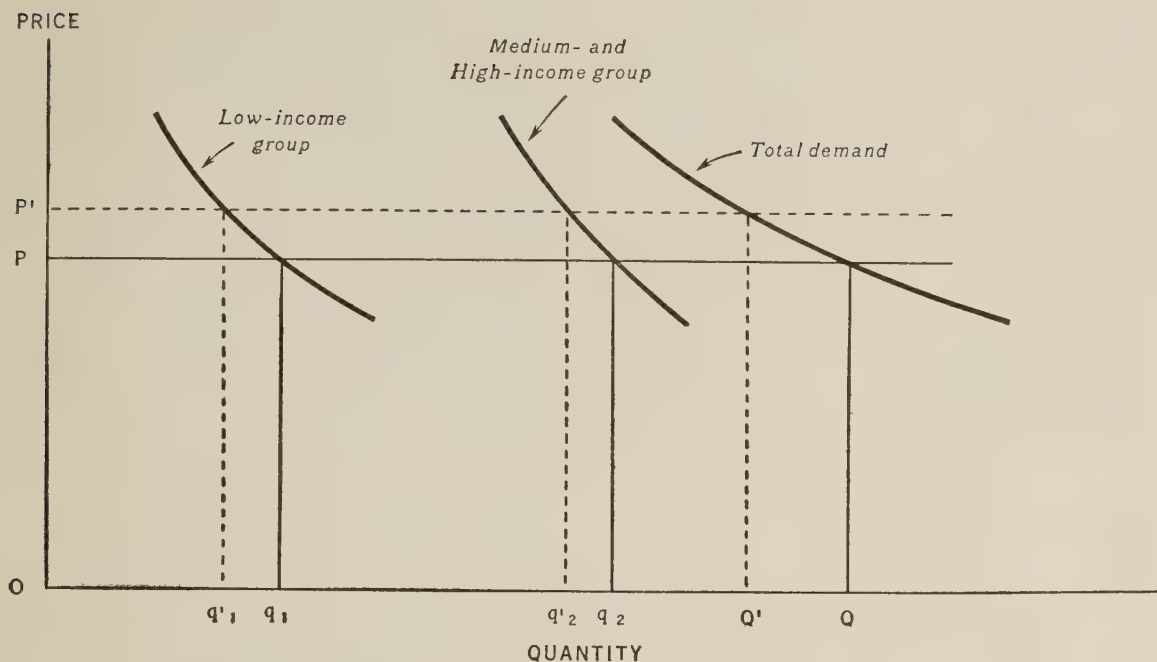
The foregoing principle can perhaps be made clearer by recourse to figure 2. The line marked "low-income group" shows how much might be taken at various prices by families with limited incomes—the group whose diets are commonly inadequate. The demand of the more fortunate group of con-

sumers is described by the line "medium- and high-income consumers," and the quantities taken by both groups are added together to make the "total demand" at the right of the figure.

This diagram shows what is likely to happen to different groups of consumers when an effort is made to increase farm income by reducing the supply. Reducing the total quantity from OQ to OQ' will increase the price, and if the total market demand is inelastic, farm income will also be increased. The effect of this reduction is felt, of course, by all consumers, in terms of both higher prices and reduced supplies. But the burden of this reduction will fall most heavily on low-income people, or those whose diets are already most deficient. (Their consumption is reduced from q_1 to q'_1 , a relatively high percentage decrease, whereas that of the upper income groups is reduced only slightly—from q_2 to q'_2 .) The result is likely to be a greater aggravation of malnutrition than is indicated by the actual reduction in the total supply because most of this reduction is borne by low-income people.

The diagram also suggests a way by which farm incomes could be increased with little or no reduction in total food supply. As the demand of medium- and high-income consumers is probably inelastic, their food expenditures probably increase as prices rise, though the quantity they consume is reduced only slightly. But this is less true of the low-income consumers, whose demand is not so inelastic. Because of this situation, the income of farmers could be raised by lowering the price of food to low-income families and raising it to high-income families. The effect of this would be to induce the more fortunate portion of the population to spend more money for their food without at the same time reducing the total food expenditure of low-income families. The same principle would apply even if the demand of high-income consumers were elastic, provided that of low-income consumers were more elastic.

⁹ As the terms "elastic" and "inelastic" demand are used frequently throughout this report, it is essential that the reader understand their meaning. Elasticity of demand indicates consumers' responsiveness to changes in price. When the price of a commodity falls, people tend to buy more of it, but how much more depends on the elasticity of their demand. If, when the price falls, they increase their purchases so much that their total expenditure is greater than before, their demand is said to be elastic; but if their expenditure is less, demand is inelastic. Conversely, when the price is increased, total expenditure will be reduced when the demand is elastic and increased when it is inelastic.



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FIGURE 2.—COMPOSITE CONSUMER DEMAND FOR FOOD.—The curve at the left indicates the quantity demanded by low-income consumers at various prices; the curve in the middle indicates similar quantities for medium- and high-income consumers; that at the right is the sum of these two components—the total consumer demand for food.

Hence, if quantity OQ is supplied, it will sell for price OP , the low-income consumers buying the quantity Oq_1 , the medium- and high-income group, Oq_2 .

If total supply were reduced to OQ' it could command a higher price, OP' ; and if total consumer demand is inelastic, as we suppose, the total consumer expenditure for food would be greater than with the larger supply ($OQ' \times OP'$ greater than $OQ \times OP$). At the higher price, medium- and high-income consumers would reduce their food consumption from Oq_2 to Oq_2' —a small percentage decrease; but low-income consumption would fall from Oq_1 to Oq_1' , a much larger percentage decrease. The burden of reduced supply would thus bear most heavily upon the low-income group.

PRINCIPLES UNDERLYING THE EFFECT OF THE STAMP PLAN ON FARM INCOME

The stamp plan does not directly reduce prices to low-income consumers. But it has a similar effect in that it gives them additional food purchasing power—in the form of blue stamps—which enables them to buy a larger proportion of the total food supply. Thus the food expenditure of participating families is increased. At the same time, the medium- and high-income families who do not participate will pay more for their share of the total food supply, assuming that their demand is inelastic. It is this increase in the combined food expenditure of both groups, rather than the amount of the sub-

sidy as such, which is important in determining the increase in farm income resulting from the plan. If there are no changes in unit marketing charges, and no changes in the total marketing bill resulting from changes in the total supply marketed, then all of this increase in consumer food expenditure will be reflected in growers' incomes.

The effect of the stamp plan on total expenditures for food will depend primarily on: (1) The amount of the blue-stamp subsidy; (2) the extent to which the blue stamps represent a net addition to the preplan food expenditures of the participants; and (3) the elasticity of the demand of medium- and high-income consumers who do not participate in the plan. Obviously, the effects of the plan

depend first of all on the amount of money put into it. But it is possible that food expenditures may be increased by more than the amount of the blue-stamp subsidy, depending on the second and third factors listed above.

The relationship of these three factors to each other and the way they affect food expenditures under the stamp plan are illustrated by figure 3. This differs from figure 2 in that the demand curve for the low-income group has been reversed; that is, q_1 ,

indicating the quantity bought by this group, is measured from right to left, while the quantity bought by other groups is measured, as usual, from left to right. In the absence of the stamp plan, low-income consumers will get that part of the total supply indicated by q_1 and other consumers that indicated by q_2 . The price will be equal to QP , the total expenditures of low-income consumers will be measured by the rectangle A , and of all other consumers by the combined rectangles $B+C$.

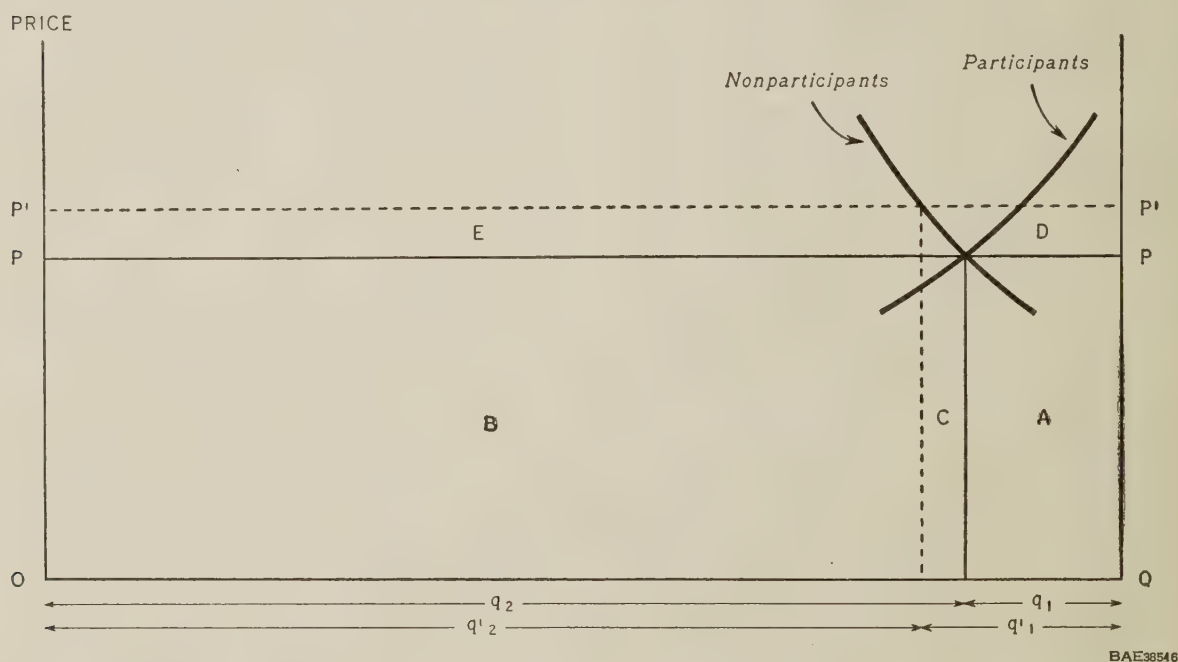


FIGURE 3.—EFFECT OF INCREASING THE FOOD-PURCHASING POWER OF LOW-INCOME CONSUMERS, ASSUMING A FIXED TOTAL FOOD SUPPLY.— OQ here represents the fixed quantity of food to be marketed. Preplan demand of nonparticipants in the stamp plan is measured from the left-hand axis, that of participants from the right-hand axis. The intersection of these two demand curves thus determines the price (OP) at which the total supply can be sold. At this price, participants will buy quantity q_1 , nonparticipants, q_2 . Expenditure of participants is thus represented by rectangle A ($q_1 \times OP$), that of nonparticipants by $B+C$ ($q_2 \times OP$).

If the expenditure of participants is increased under the plan to an amount equal to $A+C+D$, then the price level will be bid up to P' , with participants obtaining quantity q'_1 and consumption of nonparticipants being reduced to q'_2 . The expenditure of nonparticipants is thus changed from $B+C$ to $B+E$, while total consumer expenditure is increased by $E+D$ as a result of the price rise.

If the demand of nonparticipants is inelastic, their total food expenditure must increase as the price rises; that is, E must be greater than C . Therefore, $E+D$, the increase in total consumer expenditure, must be greater than $C+D$, the increase in participants' expenditure. If we assume that the participants do not decrease their own out-of-pocket allowance for food (equal to A before the plan), the increase in their expenditure under the plan must be at least as great as the subsidy. Under these assumptions, therefore, total consumer food expenditure would increase by more than the amount of subsidy.

Now suppose that these low-income consumers receive a blue-stamp subsidy equal to 50 percent of their former food expenditure, this being the ratio of blue to orange stamps. This increase in purchasing power enables them to bid part of the supply away from nonparticipating families, with the result that the average level of food prices is bid up. On the diagram, the new level of expenditure of the participating group of consumers is represented by $C+D+A$, C and D being the amount of the blue-stamp subsidy. The division of the supply between the two consumer groups has also been altered so that the low-income consumers get more than they formerly did, and high-income consumers get less. (Compare q'_1 with q_1 , and q'_2 with q_2).¹⁰ If the demand of the high-income consumers is inelastic, they will now be spending more money for their smaller share of the supply than they formerly spent for a larger share ($B+E$ is greater than $B+C$).

Under the assumptions made in figure 3, the increase in the total expenditures for food is greater than the amount of the subsidy. (It will be recalled that $C+D$ is the amount of the subsidy; and, since E is greater than C , the increase in consumer expenditures exceeds the amount of the subsidy.)

This suggests a principle of considerable importance in the operation of the stamp plan. If the demand of nonparticipating consumers is inelastic, if the out-of-pocket food expenditures of the participating families are maintained, and if the total marketing bill is not increased, the benefits to farmers will exceed the amount of money expended by the Government for the blue-stamp subsidy. This excess of farm benefits over the amount of the subsidy comes, of

¹⁰ It is assumed here that the total supply of food marketed is not affected by the stamp plan. Conceivably, the effect of the subsidy might be to increase the market supply as well as to change its distribution between different groups of consumers. This would certainly be the case where part of the supply produced would otherwise be left unharvested because of low prices (that is, where there is a physical surplus), or if the long-run effect of the plan were to raise farm prices sufficiently to call forth increased production. The principles governing such situations are somewhat different from those discussed here, and the modifications they introduce are discussed later (pp. 20 to 23).

course, out of the pockets of nonparticipating consumers. The more inelastic their demand, the greater this excess is likely to be.¹¹

It should also be noted that the elasticity of the demand for food on the part of nonparticipating families determines the division of the benefits of the plan as between farmers and low-income, participating families. If the nonparticipants' demand is very inelastic so that the quantity of food they buy is little affected by price changes, the effect of the plan will be mainly to raise prices. This will benefit farmers, but it will not greatly help low-income consumers because even with their added purchasing power they will be unable to bid much of the available supply away from the medium- and high-income families. On the other hand, if the demand of the latter is only moderately inelastic, price rises and benefits to farmers will be smaller, but participants will be able to increase their food consumption considerably. Actually, benefits of the plan are shared, of course, by both farmers and low-income consumers; but in general the greater the benefits to one group, the smaller the benefits to the other.

EFFECTS OF THE PLAN ON INCOMES FROM INDIVIDUAL COMMODITIES

The foregoing discussion is in terms of the effect of the stamp plan on total expenditures for food. But an important feature of it is that the blue-stamp subsidy can be spent only for particular foods—those specified on the surplus-commodity list. This device is intended to direct the major benefits of the plan to particular groups of producers. The effects of the plan, therefore, must be thought of in terms of individual commodities

¹¹ If, as has been suggested, the demand of high-income consumers is more inelastic than that of low-income people, the demand of nonparticipants will tend to be more inelastic as the proportion of participants in the plan is increased. From the farmers' viewpoint, therefore, the plan should be operated on a scale that will permit participation by the largest possible proportion of the low-income families. Benefits to farmers per dollar of subsidy will thus tend to increase as the amount of the subsidy is increased.

as well as of foods and farm income as a whole.

The effects for individual commodities can be illustrated in general by diagrams similar to figure 3, which relates to total foods. The rise in price of any individual surplus commodity will depend partly on the eagerness of consumer participants to obtain more of it and on the resistance of nonparticipants to reduction in their consumption of it—in other words, on the elasticities of demand for the commodity on the part of the two consumer groups. Also to be taken into account are: (1) The number and type of commodities on the surplus list which compete for the blue stamps; (2) marketing costs and margins; and (3) price and supply interrelationships between individual food products. Further discussion of these factors is reserved to pages 47 to 53.

It is possible also that for some commodities the plan may have the effect of leveling out seasonal variations in prices received by producers because of the strengthening of market demand at the time producers are marketing the bulk of their supplies.

MAINTAINING THE FOOD EXPENDITURES OF PARTICIPATING FAMILIES

It has already been pointed out that if, as seems probable, the demand of nonparticipating consumers for food is inelastic, total consumer expenditures for food will tend to increase by more than the amount of the blue-stamp subsidy. But this conclusion was based upon the simplifying assumption that participants in the plan maintained their own out-of-pocket expenditures for food at the preplan level. To the extent that they fail to do this, the subsidy is "wasted" so far as its effect on farm incomes is concerned. Participants are using the subsidy, in such a case, to increase their purchasing power for nonfood items.

A distinctive feature of the stamp plan as a method of surplus disposal is the use of orange stamps as a safeguard against situations of this kind, for it is intended that

participants be required to buy orange stamps in amounts equivalent to their preplan level of food expenditure before they are given any blue stamps, thus insuring that the blue stamps will represent a net increase over their former food expenditures.

It is to be remembered that the orange-stamp requirement has the further feature that additional blue stamps are given free if more than the minimum of orange stamps are purchased. Participants thus have an incentive not only to maintain their former food expenditures but actually to increase them. To the extent that they do this, the effect of the stamp plan is to increase farm income even more than is indicated in figure 3. This diagram was drawn on the assumption that participants' preplan food expenditures, represented by the rectangle *A*, are exactly maintained; but if these out-of-pocket expenditures are not only maintained but even increased under the plan, then the benefits to farmers are correspondingly increased. It is equally true, of course, that if the expenditures are not maintained, then the benefits are smaller than those indicated.

The orange-stamp requirement is discussed on pages 38 to 46, where analysis is made of the evidence so far available as to the changes in participants' out-of-pocket food expenditures which occur under present operating methods. It is important at this point only that the purpose and principle of the orange-stamp requirement be clearly understood.

MARKETING MARGINS IN RELATION TO THE STAMP PLAN

In the discussion thus far, it has been assumed that marketing costs do not change as food prices increase under the stamp plan. If this were true, then farmers would get all the increase in consumer expenditures resulting from the plan, even in those cases where the costs of marketing represent a large percentage of the consumer's dollar.

WHEN THE TOTAL SUPPLY OF THE COMMODITY IS FIXED

If the supply of a commodity is fixed and would be marketed through regular commercial channels in the absence of the stamp plan, then the immediate effect of the plan is to raise food prices by diverting part of the supply from one group of consumers to another. Since the quantity of food handled is the same as before, the total cost of moving it from farmer to consumer should not be greatly changed. Even though the farm price were only 10 or 15 percent of the retail price, the farmer would still receive all of the increase in consumer expenditures attributable to the stamp plan if marketing margins were not increased.

Actually, the situation is not quite so simple as this. The subsidy is paid at the retail level, and before it reaches the farmer it must pass through the marketing system. The greater the number of processing and marketing steps through which the commodity passes and the less fluid the relationship between farm and retail prices, the less is the likelihood that the increase in consumer expenditures will be fully reflected in the farm price.

With an increase in retail prices, which would result under conditions of fixed supply if the stamp plan were effective in increasing total consumer expenditures, some increase in marketing charges would normally be expected to occur. The relationship between changes in retail food prices and changes in marketing spreads has been studied by the Bureau of Agricultural Economics.¹² A rough generalization from these studies is that, when retail prices increase by a given percentage, marketing margins increase by about one-third of that percentage. Therefore, if marketing margins take 60 percent of the consumer's dollar, about one-fifth of an increase in consumer expenditures due to

the rise in price is absorbed in the marketing system, four-fifths going to the farmer.¹³

It is possible, however, that under the stamp plan margins for the surplus commodities might not behave as they normally do and that decreases rather than increases in these margins might be obtained. Knowing that the Government and the farmers are anxious to move these commodities into consumption as rapidly as possible, food handlers might voluntarily tend to reduce their margins on these commodities, although they do not as yet appear to have done so to a significant extent (see pages 59 to 62). It is also possible that changes might be made in the mechanics of the stamp plan so as to insure some reduction of margins. Several proposals in this direction are suggested on pages 62 to 63.

WHEN SUPPLY IS INCREASED

The conclusion just reached that most, if not all, of the increase in consumer expenditure would go to the farmers applies only when the total market supply is fixed. It does not apply when the effect of the plan is to increase the supply marketed, because this will also increase the total marketing bill. Such a situation might actually arise where the farm price is so low that part of the supply might be left unharvested (referred to hereafter as a physical surplus). In this case, the effect of the plan would be to increase the supply marketed rather than to raise prices significantly. And when this occurs, the farmer will receive on the *additional* part of the supply marketed *only* that part of the increase in consumer expenditure represented by his share of the consumer's dollar.

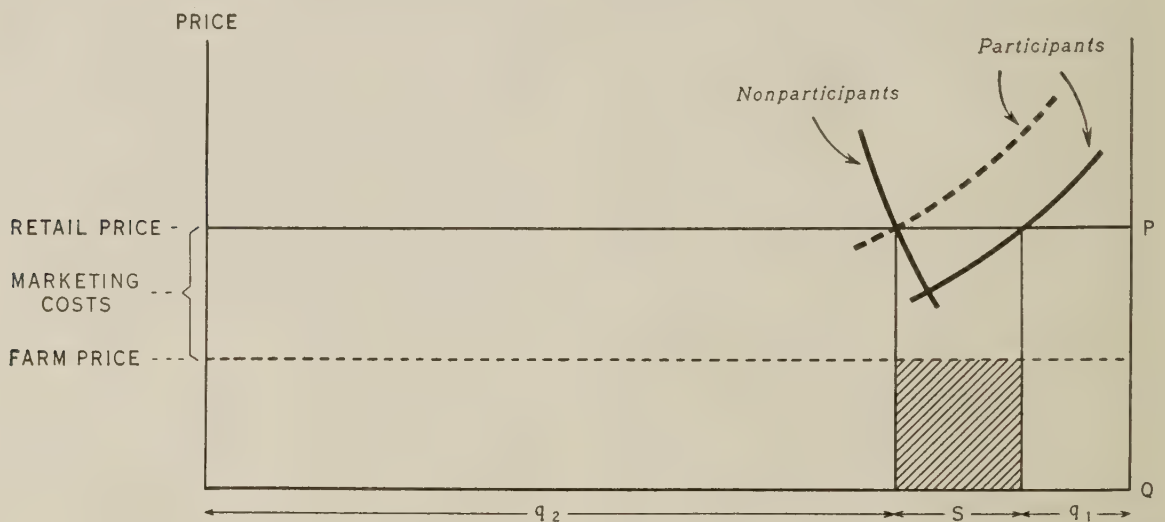
¹² For illustration: Suppose normal consumer food expenditures are 15 billion dollars per year, of which 9 billion dollars represents transportation and marketing charges; and suppose that, because of rise in the price level, these expenditures are increased by 900 million dollars—6 percent. Marketing charges would be expected to increase by one-third of 6 percent, or 2 percent—an increase of 180 million dollars. The increase in farmers' incomes would therefore be 720 million dollars, or four-fifths of the increase in consumer expenditures. (The apparent paradox in these figures is resolved if it is noted that, as a result of the price rise we have assumed, the "farmer's share in the consumer's dollar" is raised from 40 cents to about 42 cents.)

¹³ See BEEN, RICHARD O. JR., AND WAUGH, FREDERICK V., PRICE SPREADS BETWEEN THE FARMER AND THE CONSUMER. 73 pp. Bur. Agr. Econ. 1936. [Processed.]

This is illustrated in figure 4, the same type of diagram as figure 3, except that in figure 4 the price to growers is so low that part of the supply would be left unharvested in the absence of the plan. At the price, P , necessary to cover harvesting and marketing costs, the high- and medium-income families buy a quantity q_2 , the low-income

to sell a larger part of the supply at a price sufficient to cover harvesting costs. But it would not have the effect of raising the level of farm prices unless the amount of the subsidy were more than sufficient to remove all the physical surplus.

Consequently, the farmer would receive only that part of the subsidy represented by



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FIGURE 4.—PHYSICAL SURPLUS.—The preplan demand curves of participants and nonparticipants are drawn as in figure 3. Here, however, it is assumed that a retail price P must be obtained to cover the costs of harvesting and marketing the supply Q . At price P , participants would normally buy only quantity q_1 , nonparticipants only q_2 , leaving a quantity S unsold—a physical surplus.

In this situation, a subsidy to participants which does not increase their demand for food beyond the position indicated by the dotted curve will merely enable them to buy the physical surplus; no price rise will be brought about. To cause a rise in price would require a subsidy large enough to raise their demand above the position indicated by the dotted curve.

On the sale of the surplus, farmers will receive, of course, only their normal share of the retail price, since marketing costs for handling this extra supply will have to be covered. If the horizontal dotted line on the diagram is assumed to represent the farm price which corresponds to the retail price P , then the effect of the plan in enabling participants to buy all of the surplus will be to increase farmers' gross income by the amount represented by the shaded area. The remainder of the increase in retail expenditure will go for marketing costs (including processing and transportation).

families a quantity equal to q_1 , while the surplus, S , is left unsold on the farm.

The effect of the blue-stamp subsidy in such a situation would be to enable persons receiving blue stamps to buy more of the supply at prices not greatly different from those prevailing in the absence of the plan. This would benefit low-income consumers, and it would help farmers by enabling them

the shaded area in figure 4. The remainder is absorbed by the marketing system and will vary according to the nature of the processing and marketing costs. For a commodity the marketing costs of which are high in relation to the retail price, the farmer will receive only a small part of the blue-stamp subsidy, and vice versa.

This suggests several practical considera-

tions to be kept in mind in the operation of the plan. First, where there is an unharvested or physical surplus of a commodity, the chief benefits of the plan will go to low-income consumers rather than to farmers. Only if the blue-stamp subsidy is large enough to raise the demand of low-income families to a point where prices are increased will farmers begin to receive substantial benefits from the plan. Second, marketing costs are a matter of considerable importance where there are physical surpluses because in this case only that part of the subsidy left after the deduction of marketing costs will go to farmers.

LONG-RUN EFFECTS ON PRODUCTION AND CONSUMPTION

In the preceding sections, the stamp plan was discussed in terms of its effect in the short run, assuming a fixed supply to be marketed at any price over and above the minimum necessary to justify harvesting and marketing. It is of interest to discuss also what the long-run effects of the plan would be if it were continued over a number of years.

If operated on a national scale and with substantial amounts of money appropriated for the blue-stamp subsidy, the plan should appreciably increase total consumer demand for food. If production is unregulated, it would be expected that the higher prices resulting from this increase in demand would call forth production increases. The long-run effect, therefore, would involve both higher prices to farmers and greater agricultural production than would otherwise have occurred.

On the other hand, if production were adjusted to some economic goal such as parity prices, the first effect would be to raise prices toward this goal. Once the goal had been achieved, however, it is possible that some production increase could be combined with maintenance of prices at parity. Here also, therefore, the long-run effect might well be a larger agricultural production as well as a higher price to farmers. In both cases, low-

income consumers would benefit because they would get a larger share of the food supply.

An extended and successful stamp plan, however, would not only affect the total quantity of food produced but also be likely to bring about shifts in production as between different agricultural products. To the extent that the plan is effective in directing the subsidy to the commodities declared to be surplus, the greatest incentive toward increased production would occur among the commodities on this list. This suggests that by careful choice of the commodities to be listed it might be possible to bring about shifts in production which would be desirable from a nutritional standpoint, or from any other standpoint—soil conservation, for instance. On the other hand, it would appear desirable to avoid using the list in such a way as to perpetuate chronic surpluses of commodities not needed in the diets of low-income people.

One safeguard against this is the fact that consumer preferences unavoidably come into play in deciding what commodities shall receive the greatest benefit under the plan. Even though a product is placed on the list, if it is one that ranks low in preference among consumers, they will minimize any increase in their purchases of it and devote most of their additional purchasing power to other items which they like better. And it will always be possible for them to devote some of their added buying power to commodities for which they have high preference even though these are not placed on the list. Consumer preference, therefore, properly plays an important part in determining the commodities for which there will be the greatest increases in demand, and consequently the greatest incentives to increased production, in the long-run operation of the plan.

COMPARISON OF THE STAMP PLAN WITH DIRECT PURCHASE AND DISTRIBUTION

We have seen that the principles underlying the stamp plan are such that it may be expected, in most cases, to increase farm

income by an amount comparable with the blue-stamp subsidy, and under certain conditions by more than this amount. It may be asked, however, whether the benefit to farmers might not be still greater if the same amount of money were used under the Direct Purchase and Distribution Program of the Surplus Marketing Administration.

The answer to this question depends on (1) the quantity of food surpluses that can be purchased with a given amount of Federal funds and (2) the extent to which the foods thus purchased represent a net increase in the food consumption of participants. The quantity of foods that can be bought depends, of course, on the relative cost to the Government under the two methods, but this will not necessarily determine the effect on farm income.

Under the Food Stamp Plan, the Federal subsidy is spent by the consumer in the retail store. Under the Direct Purchase and Distribution Program, purchases are made by the Government at farm or wholesale points, and the commodities are shipped directly to State receiving points, where they are distributed mainly with W. P. A. and local relief labor. The difference, therefore, between the out-of-pocket commodity costs under the stamp plan and the direct purchase program will be roughly equal to the difference between the retail price and the wholesale landed cost in carload lots. For some commodities this cost difference may be as little as 15 percent and for others as much as 45 percent. Margin studies indicate that for the commodities on the surplus list thus far the commodity costs under the Direct Purchase and Distribution Program will average about one-third less than under the Food Stamp Plan.

But before drawing any conclusions from this as to the effect on farm income, it must be remembered that the net benefit to farmers under either system depends on the effect on total food sales. No matter how cheaply the direct distribution program might operate, the farmer would gain nothing if the

free food distributed were merely substituted for food which the recipients would have bought in any event. The recipient would be helped by having more money to spend for nonfood items, but farm income will be raised only if expenditures for food are increased.

Actually, of course, it is not probable that stamp-plan participants or recipients of free food under the direct distribution program would substitute all of the Federal subsidy for their normal food purchases. Both programs are almost certain to result in some increase in the food consumption of low-income participants.

In some situations, the Direct Purchase and Distribution Program may be expected to increase farm income more than the Food Stamp Plan with any given amount of Federal funds. This would almost certainly be true where the program supplements the relief given in the form of grocery vouchers rather than cash, as it does in many cities. Under the voucher method of relief, the relief client receives an order from the local relief agency for a given quantity of food. We have seen that where this is the case, local relief agencies enter into an agreement with the Department of Agriculture not to reduce these grocery orders as a condition for receiving surplus food both under the Food Stamp Plan and under the Direct Purchase and Distribution Program. Clearly, then, there is no problem of substitution in such cases for either plan, since whatever quantities of food are obtainable with the Federal subsidy are in addition to the quantities that were formerly consumed. But because more food can be obtained with a given appropriation under direct purchase and distribution, this plan will tend to raise farm income more than the stamp plan for grocery-voucher-relief people.

The Direct Purchase and Distribution Program may also be expected to raise farm income by more than the Food Stamp Plan where there is no orange-stamp requirement. In such cases, relief people are given the

blue stamps without any requirement other than that these stamps shall be spent for designated surplus products. When this is done, the effect on the total food consumption of the recipients is probably not greatly different from what it would be if they were simply given the same amount in cash, or surplus commodities of equivalent value under direct distribution. But here again the latter program would have a greater effect on farm income than the stamp plan with any given amount of Federal funds, because more food could be purchased and distributed. Neither plan is altogether satisfactory from the farmer's standpoint if no method is provided for maintaining the normal food expenditures of relief people.

The distinctive feature of the Food Stamp Plan is that it seeks to maintain these expenditures by means of the orange-stamp requirement. When this feature is used, as it is for those receiving adequate cash relief and for W. P. A., it may be expected to increase farm income as much as the Direct Purchase and Distribution Program and possibly more.

Suppose for illustration, that low-income families normally spend 800 million dollars a year for food and that they receive in addition 400 million dollars in blue stamps. In a later part of this report it is estimated that at present approximately one-fourth of this subsidy is substituted for normal food expenditures. If so, their total food expenditure would be 1,100 million dollars under the Food Stamp Plan.

Under the Direct Purchase and Distribution Program the same Federal subsidy (400 million dollars) would buy 600 million dollars' worth of food at retail. If the degree of expenditure substitution were assumed to be the same as under the stamp plan (that is, one-fourth of the subsidy), then participants in the direct distribution program would be consuming 1,250 million dollars' worth of food as compared with 1,100 million dollars' worth under the stamp plan, with propor-

tionately greater effect in raising farm income. But the degree of substitution under direct distribution would almost certainly be greater because this program has no device comparable with the orange-stamp requirement for maintaining former food expenditures. Since low-income people spend, on an average, about 40 to 45 percent of their income for food, a more reasonable assumption probably is that not more than this percentage of the food subsidy will represent a net increase in their food consumption. Going back to the example used, this would mean that with direct distribution they would be consuming food with a retail value of 1,040 to 1,070 million dollars as compared with 1,100 million dollars under the stamp plan. There are some grounds for assuming that total food expenditures under the direct distribution program might be even less than this, since the proportion of the family budget spent for food tends to decrease as family income increases.¹⁴ It is clear, therefore, that in the type of case under discussion, the cost disadvantage of the stamp plan is likely to be offset by its advantage in maintaining the food expenditures of participants by means of the orange-stamp requirement.

To sum up, it may be said that if surplus disposal is confined to relief people who receive grocery vouchers or to persons otherwise unable to buy orange stamps, the direct purchase and distribution program is likely to be more effective in raising farm income than the food stamp plan with any given amount of funds. But when the orange-stamp formula is used the advantage of the stamp plan in maintaining normal food expenditures of participants is likely to outweigh its cost disadvantage from the standpoint of a farm-relief program.

¹⁴ Assume that a relief family has an annual cash income of \$500 per year, 45 percent (or \$225) going for food. If this family were given \$100 worth of free food, it would be the same as raising its income to \$600. But a family with this income might be expected to spend less than 45 percent of its income for food—say 43 percent, or \$258. Then, with a food subsidy of \$100, an increase of only \$33 in food expenditure would be achieved.

Scope of the Food Stamp Plan: Relation to Total Food Sales and Consumer Participation

As of June 30, 1940, the Food Stamp Plan was operating in 83 areas, and 40 others had been designated for its operation. The total cumulative value of the blue stamps issued in all cities up to July 1 was about \$16,538,000, and the total number of people participating as of this date was approximately 1,500,000 (table 1, p. 14).

Begun on an experimental basis, the stamp plan, even on the present extended scale of operations, evidently is not yet a large factor in relation to national food sales or total population. More significant, however, is the relationship of the plan to food sales and numbers of people in the experimental cities. It is this which provides the best gage of what the plan would mean if operated on a national scale with the present stipulations as to participation and rate of subsidy.

VALUE OF BLUE STAMPS IN RELATION TO TOTAL FOOD SALES IN EXPERIMENTAL CITIES

In five experimental cities, the value of the blue stamps has amounted to roughly 4 percent of total food sales (table 2). There is no way of ascertaining the exact percentage, and it will vary somewhat between cities, depending on the relief load—but so long as the stamp plan is applied only to relief people and present conditions of unemployment persist, the best estimate is that blue stamps will amount to somewhere between 3 and 7 percent of total sales in the areas covered by its operation.

TABLE 2.—Blue-stamp sales in experimental cities as a percentage of total food sales

City	Ratio of blue-stamp sales to total sales in the sample stores ¹		Ratio of blue-stamp sales to total food sales as reported in 1935 Census of Business ²
	Stores in high-income areas	Stores in low-income areas	
	Percent	Percent	Percent
Rochester-----	0.49	7.56	3.85
Dayton-----	1.31	3.74	3.02
Birmingham-----	1.58	6.06	6.49
Seattle-----	1.42	4.06	4.02
Shawnee-----	1.45	9.75	-----
Des Moines-----	.25	5.64	4.56

¹ See appendix, p. 91, for a discussion of the make-up of this store sample. The sales ratios were calculated from bimonthly data for the period May 20–November 25, 1939, in Rochester, June 12–September 23 in Dayton, August 5–December 2 in Birmingham, July 16–December 2 in Seattle, August 9–December 2 in Shawnee, and August 21–November 18 in Des Moines.

² Food sales as reported by the Census of Business include those of all grocery and combination stores and fruit stores and vegetable markets. These types of retail outlets account for most of the total food sales and are most comparable with those retail outlets now participating in the stamp plan. Food sales reported in the Census of Business for 1935 have been adjusted for changes in the price level.

The basis for this estimate is shown in table 2, columns 2 and 3, which indicate the ratios of blue-stamp sales to total sales in a sample of stores, selected to be representative of both high-income and low-income areas. For stores in high-income areas the proportion is little more than 1 percent, although in stores where relief people do their trading the percentage may run as high as 10 percent, and even higher in some cases. The total value of blue stamps in relation to total grocery sales as reported by the Census of Business (column 4) is perhaps the best

basis for estimation, and this indicates that blue-stamp sales are around 4 percent of total sales.

NATURE AND EXTENT OF CONSUMER PARTICIPATION

As consumer participation in the stamp plan thus far has been confined mainly to persons on relief and on the W. P. A. rolls (except in Shawnee, Okla., where all families whose annual income is less than \$1,000 may participate), the extent of consumer participation will depend on (1) the number of eligible people on relief and (2) the proportion of these eligibles who choose to use the plan.

The stamp plan is now available to from 8 to 17 percent of the total population in the experimental cities, depending on the relief load (table 3). In Rochester for example, about 42,000 persons out of a total population of about 334,000 are eligible to participate. Of these 42,000 eligible persons, about 33,000 were actually participating in October 1939. Expressed as a percentage of total population, participation in the stamp plan has been about 10 percent in Rochester; 9 percent in Dayton; 6½ percent in Seattle; 14 percent in Birmingham and Des Moines; and 17 percent in Pottawatomie County, Okla. The relatively high percentage in Pottawatomie County is partly due to the fact that a small number of low-income families, as well as relief persons, participated there.

Experience in the experimental cities indicates that 75 to 80 percent of the eligible persons may be expected to participate in the stamp plan (table 4). The range of participation in the six experimental cities as of October was from 72 percent of the eligibles in Seattle to 86 percent in Birmingham. Usually it takes 1 or 2 months after the plan is inaugurated in a city for the eligible people to familiarize themselves with it, but after this initial period is past the percentage of participation has tended to remain relatively constant.

TABLE 3.—Total population, number of persons eligible, and number participating in the stamp plan, by stamp cities

[May—October 1939]				
City, total population, and month	Persons eligible under stamp plan		Persons participating in stamp plan	
	Number	Per-cent	Number	Per-cent
Rochester (333,500):				
May (16-31).....	48,485	14.5	20,812	6.2
June.....	47,490	14.2	28,481	8.5
July.....	44,217	13.3	28,581	8.6
August.....	41,770	12.5	29,996	9.0
September.....	40,950	12.3	31,353	9.4
October.....	42,254	12.7	32,737	9.8
Dayton (206,600):				
June (5-30).....	21,327	10.3	16,267	7.9
July.....	23,143	11.2	17,554	8.5
August.....	22,204	10.7	17,321	8.4
September.....	22,520	10.9	19,115	9.3
October.....	22,921	11.1	18,764	9.1
Seattle (374,100):				
August.....	28,813	7.7	22,028	5.9
September.....	31,942	8.5	24,486	6.5
October.....	34,186	9.1	24,477	6.5
Birmingham (273,300):				
August.....	43,771	16.0	37,460	13.7
September.....	43,909	16.1	38,968	14.3
October.....	45,555	16.7	39,300	14.4
Pottawatomie County, Okla. (70,000):				
August.....	8,489	12.1	7,905	11.3
September.....	12,538	17.9	9,610	13.7
October.....	14,165	20.2	11,793	16.8
Des Moines (145,300):				
September.....	23,476	16.2	20,188	13.9
October.....	25,164	17.3	20,241	13.9

It is evident from tables 3 and 4 that as long as the stamp plan is confined to relief people, not more than 15 percent of the total population would be reached even if the plan were extended to a national basis. At present levels of unemployment and with 75 percent of the eligible relief people participating, the plan would reach approximately 15 million persons if it were operated on a national scale with participation restricted to persons on relief. If the stamp plan were applied in all cities and towns of 2,500 people and over and were extended to include all families with incomes under \$1,000 per year, around 23 million persons would be expected to participate. If extended to rural areas on the same basis, this total would be increased to 35 or 40 million participants.¹⁵

¹⁵ These estimates are based on computations from tables in the following publication: U. S. NATIONAL RESOURCES COMMITTEE. CONSUMER INCOMES IN THE UNITED STATES: THEIR DISTRIBUTION IN 1935-36. 104 pp. Washington, D. C. 1938. The figures have been adjusted for changes in the national income.

TABLE 4.—Percentages of total eligible persons participating in stamp plan, by type of relief case
[May–October 1939]

City and type of relief	May	June	July	August	September	October
Rochester:	<i>Per-cent</i>	<i>Per-cent</i>	<i>Per-cent</i>	<i>Per-cent</i>	<i>Per-cent</i>	<i>Per-cent</i>
Old-age assistance.....	17.9	25.6	49.7	52.8	53.9	54.1
Aid to children ¹	6.1	29.5	56.5	60.6	84.0	71.6
Aid to blind.....	13.0	14.8	24.5	29.6	37.0	37.0
General relief.....	56.1	68.9	70.7	74.6	82.7	81.2
W. P. A.	21.3	50.0	52.9	66.5	54.7	72.4
Total.....	42.9	60.0	64.6	71.8	76.6	77.5
Dayton:						
Old-age assistance.....		75.4	59.5	63.8	69.6	71.2
Aid to children ¹		95.7	87.7	88.2	92.9	93.4
Aid to blind.....		59.5	49.4	47.6	43.0	48.8
General relief.....		86.1	85.9	85.1	94.9	87.5
W. P. A.		64.9	65.8	71.0	72.1	75.5
Total.....		76.3	75.9	78.0	84.9	81.9
Seattle:						
Old-age assistance.....			41.4	57.1	59.5	69.2
Aid to children ¹			48.9	75.2	80.1	81.5
Aid to blind.....			32.9	50.3	57.3	62.3
General relief.....			76.6	89.9	87.1	73.2
W. P. A.				49.1	49.6	59.6
Total.....				76.5	76.7	71.6
Birmingham:						
Old-age assistance.....				94.1	92.3	90.7
Aid to children ¹				93.1	94.6	91.0
Aid to blind.....				90.1	96.7	89.5
General relief.....				80.1	85.8	82.8
W. P. A.				89.2	90.2	88.7
Total.....				85.6	88.7	86.3
Pottawatomie County, Okla.:						
Old-age assistance.....				74.5	15.5	37.9
Aid to children ¹				94.4	98.2	98.0
Aid to blind.....					41.3	53.6
General relief.....				92.7	91.8	94.4
W. P. A.				94.3	85.1	83.5
Total.....				93.1	76.6	83.3
Des Moines:						
Old-age assistance.....					58.3	62.7
Aid to children ¹					64.4	82.0
Aid to blind.....					65.1	73.0
General relief.....					100.0	89.9
W. P. A.					76.9	76.2
Total.....					86.0	80.4

¹ Dependent children.

VARIATION IN PARTICIPATION WITH TYPE OF RELIEF AND SIZE OF FAMILY

Figure 5 and table 4 show the proportion of persons eligible and participating in the stamp plan in the experimental cities, by type of relief case. The various relief categories include: (1) Old-age assistance, (2) aid to dependent children, (3) aid to the blind, (4) general relief, and (5) W. P. A. workers.

General relief and W. P. A. workers are by far the most important categories in terms of numbers of people, accounting for 70 to 90 percent of the persons eligible for and participating in the stamp plan. Percentage participation in some of the Social Security groups (old-age assistance and aid to blind) is much lower in most cases than for general relief and W. P. A. workers. One reason is that many of the people in these categories do not maintain their own households and therefore find it impossible to use blue stamps for the purchase of unprepared food. Even though people in these groups were given blue stamps, it is doubtful whether their food consumption would be proportionately increased if they were living with relatives or boarding out rather than maintaining their own households. Recognizing this the Surplus Marketing Administration has recently taken steps to require that participation be restricted to persons who have household facilities to utilize the commodities.

It is also noteworthy (fig. 5) that in all the cities studied here except Birmingham, a higher percentage of the persons on general relief participated in the stamp plan than of W. P. A. workers. One explanation is that W. P. A. workers were usually required to buy orange-colored stamps, whereas most of the persons on general relief were simply given the blue stamps in addition to the grocery orders or cash relief provided them by State and local relief agencies.

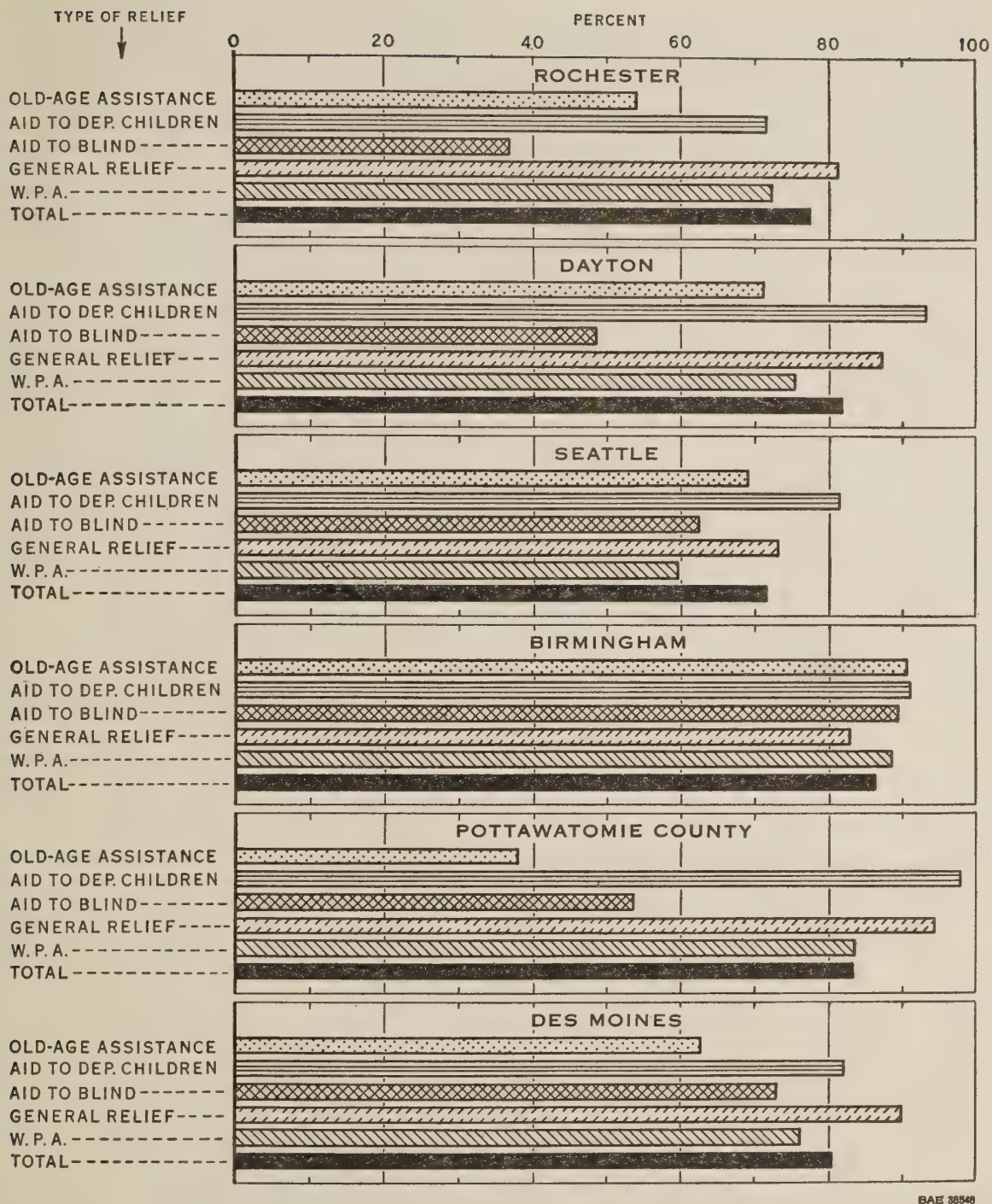


FIGURE 5.—Percentages of total eligible persons participating in the Food Stamp Plan, by type of relief case, October 1939. (Based on table 4.) Participation among recipients of old-age assistance and aid to the blind is smaller in almost every city than that of other groups, probably because many people in these categories do not keep house.

Table 5 shows the percentages of eligible persons participating, by size of family and type of relief category. There is evidently some slackening of participation at both ends of the scale—for families under 3 persons and for families over 9 or 10 in number. The relatively low participation by 1- and 2-person families is probably explained by the fact that many of them, especially those in the Social Security categories, board with other families.

For many of the larger families in the W. P. A. classification, the cash outlay required for orange stamps seems to be greater than they are able to make in order to get the blue stamps. Evidence of this is the fact that there is no noticeable decrease in participation with increases in family size in Birmingham and Pottawatomie County where no orange-stamp purchases are required. Recognition of this fact by the Surplus Marketing Administration resulted in an adjust-

ment in the participation basis, so that at present no participant is required to spend more than 50 percent of his public-assistance grant for orange stamps. These adjustments generally apply to W. P. A. families of seven or more.

PARTICIPATION UNDER THE STAMP PLAN COMPARED WITH DIRECT PURCHASE AND DISTRIBUTION

It is difficult to compare directly the number of persons participating under the stamp plan with the number formerly receiving commodities from the S. M. A. in the same cities. Some of the surplus commodities distributed by the S. M. A. were received by nearly all relief people, whereas other commodities were distributed to only part of them. Direct distribution of commodities was generally not made to W. P. A. families of five or less. Under the stamp plan such families are allowed to participate.

TABLE 5.—Percentages of eligible persons participating in Food Stamp Plan, by size of family and type of relief case, October 1939

City and type of relief	Percent for size of family (persons) indicated												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Rochester:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Old-age assistance.....	52.9	81.1	50.0										54.1
Aid to dependent children.....		73.6	70.2	72.2	69.0	74.4	70.4	70.0	66.7	75.0	100.0	100.0	71.6
Aid to blind.....	37.0												37.0
General relief.....	57.3	70.6	77.9	82.8	87.5	85.8	86.2	83.7	86.1	89.2	86.3	70.9	81.2
W. P. A.....	32.4	65.3	70.2	73.9	74.1	74.0	83.2	76.0	71.8	65.7	60.0	62.5	72.4
Total.....	54.0	69.8	75.3	79.7	83.1	82.4	84.8	81.3	81.4	84.8	80.5	69.9	77.5
Dayton:													
Old-age assistance.....	71.2												71.2
Aid to dependent children.....	44.4	100.0	96.7	95.5	90.0	100.0	90.5	100.0	100.0	100.0		0	93.4
Aid to blind.....	50.0	40.0											48.8
General relief.....	91.0	83.1	86.3	83.5	94.2	89.8	85.1	92.2	87.0	100.0	65.5	100.0	87.5
W. P. A.....	47.4	73.7	76.0	75.7	80.0	74.5	81.0	69.6	66.9	100.0	40.0	100.0	75.5
Total.....	79.6	79.1	81.3	80.7	87.5	84.4	84.5	85.2	80.1	100.0	57.0	85.7	81.9
Seattle:													
Old-age assistance.....	69.2												69.2
Aid to dependent children.....	84.9	81.2	74.0	81.2	93.1	79.5	88.9	100.0	100.0	50.0	100.0		81.5
Aid to blind.....	62.3												62.3
General relief.....	80.2	68.2	67.8	71.6	66.4	81.8	77.0	67.7	100.0	84.6	81.2	75.0	73.2
W. P. A.....	35.7	44.3	61.1	64.1	62.6	75.5	73.4	75.0	22.2	50.0	48.5	0	59.6
Total.....	73.4	65.9	67.7	71.5	68.2	80.6	77.2	70.1	96.2	77.3	77.3	75.0	71.6

TABLE 5.—Percentages of eligible persons participating in Food Stamp Plan, by size of family and type of relief case, October 1939—Continued

City and type of relief	Percent for size of family (persons) indicated												
	1	2	3	4	5	6	7	8	9	10	11	12	Total
Birmingham:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Old-age assistance.....	91.6	92.9	92.4	72.0	75.0	80.0	100.0	-----	100.0	-----	-----	-----	90.7
Aid to dependent children.....	100.0	98.2	87.6	87.6	90.1	93.8	98.4	88.5	86.7	88.9	100.0	-----	91.0
Aid to blind.....	75.0	95.5	100.0	100.0	100.0	-----	-----	-----	-----	-----	-----	-----	89.5
General relief.....	80.0	81.5	82.6	83.4	86.1	82.5	83.5	83.6	79.8	80.0	76.5	70.0	82.8
W. P. A.....	76.9	87.4	87.9	88.4	91.8	89.2	91.0	91.3	83.3	91.9	85.7	80.0	88.7
Total.....	83.4	85.8	85.6	85.9	88.9	86.5	88.7	87.5	81.8	86.4	81.8	76.0	86.3
Pottawatomie County, Okla.:													
Old-age assistance.....	33.0	39.6	39.0	40.0	85.7	100.0	100.0	100.0	100.0	-----	100.0	-----	37.9
Aid to dependent children.....	91.3	95.7	98.1	96.4	100.0	100.0	100.0	100.0	100.0	-----	-----	-----	98.0
Aid to blind.....	47.1	40.0	100.0	0	100.0	-----	-----	-----	-----	-----	-----	-----	53.6
General relief.....	93.3	91.3	93.3	93.7	96.9	96.0	92.8	95.9	93.9	100.0	100.0	100.0	94.4
W. P. A.....	75.0	23.1	82.4	88.1	73.5	93.5	100.0	97.0	86.7	88.9	100.0	100.0	83.5
Total.....	43.4	66.3	88.7	91.1	91.8	95.8	95.1	96.5	92.2	94.1	100.0	100.0	83.3
Des Moines:													
Old-age assistance.....	62.7	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	62.7
Aid to dependent children.....	-----	70.6	92.9	75.0	86.7	80.0	73.8	-----	100.0	-----	-----	-----	82.0
Aid to blind.....	73.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	73.0
General relief.....	91.3	85.7	90.3	91.4	94.6	87.9	84.6	89.1	94.5	97.5	69.4	100.0	89.9
W. P. A.....	66.7	74.0	77.8	79.9	77.6	84.2	75.0	76.0	64.7	37.9	83.3	68.8	76.2
Total.....	70.6	78.9	82.7	84.7	85.1	85.8	79.4	82.5	77.7	62.2	75.8	83.8	80.4

The proportion of eligible persons in the stamp-plan areas receiving surplus commodities from the S. M. A. before the stamp plan began operation is shown in table 6. These percentages relate to commodities that were widely distributed to all persons on relief who chose to receive them. It will be noted that the proportion of eligible persons reached with these commodities was slightly larger than through participation under the stamp plan (table 5). One reason may have been that no cash outlay was required to receive the commodities distributed by the S. M. A. as there is for orange stamps under the stamp plan.

REASONS FOR INCOMPLETE PARTICIPATION UNDER THE STAMP PLAN

It has been shown that in none of the experimental cities do all persons participate in the stamp plan who are eligible to do so.

This incomplete participation is due, of course, to a number of reasons. A survey of 179 nonparticipating families made in Rochester in October 1939 disclosed the following reasons for their nonparticipation:

<i>Reason</i>	<i>Number of times given</i>
Inability to purchase minimum amount of orange stamps.....	31
Lack of understanding of the plan.....	30
Physical inability to buy stamps and ignorance of the fact that agent could be sent.....	18
No cooking for self.....	18
Embarrassment.....	18
Back bills to pay.....	11
Loss or lack of identification card.....	10
Other reasons.....	43

On the whole, the administrators of the stamp plan, together with local newspapers and trade groups, have made considerable efforts to explain the plan to eligible consumers and to enable them to participate in

it. Perhaps a few more people might be induced to participate by still greater educational efforts, although human inertia is such that some will never participate.

TABLE 6.—Percentages of total eligible persons participating in the Direct Purchase and Distribution Program in the Food Stamp Plan experimental areas for selected months in 1939

Area	January	February	March	April	May	June	July	August
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Rochester, N. Y.....	91.4	82.9	88.6	90.3				
Montgomery County, Ohio ¹			84.6	86.6	89.5			
King County, Wash. ¹				86.9	81.4	89.3	95.5	90.4
Jefferson County, Ala.....				99.4	98.2	99.2		
Pottawatomie County, Okla.....						75.0	93.7	
State of Iowa.....						98.0		

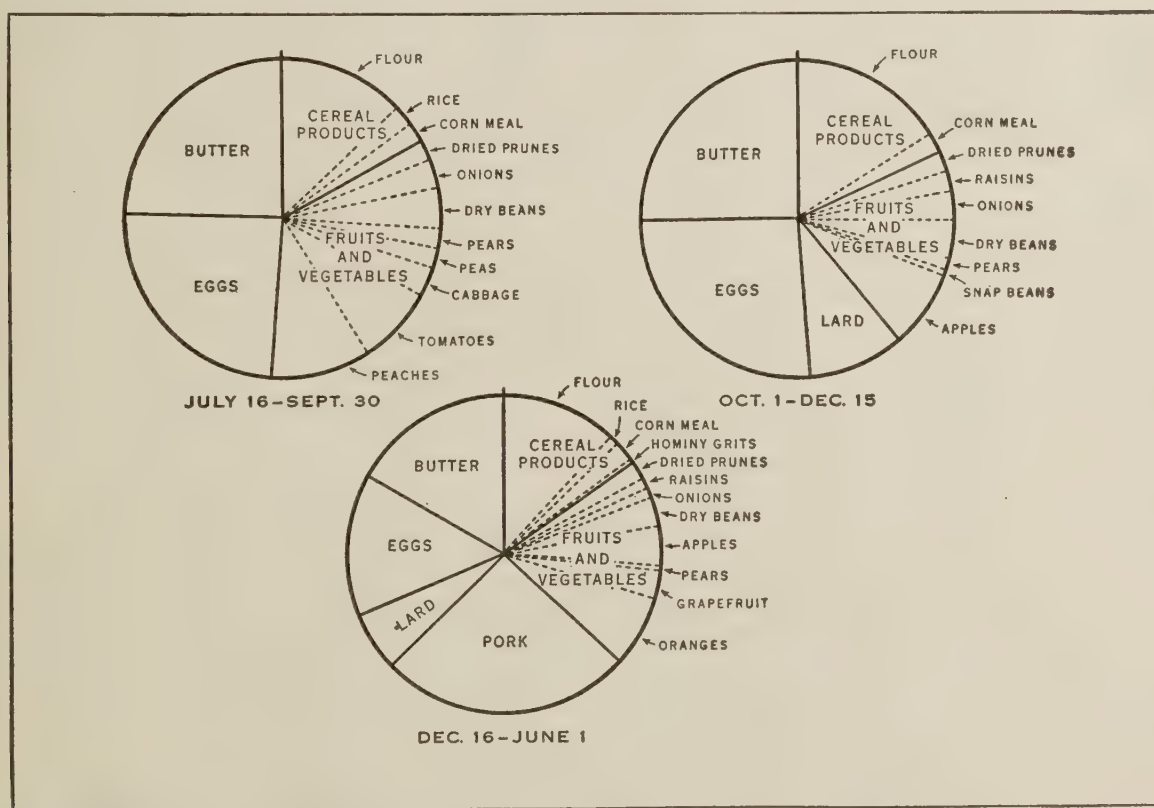
¹ The figures for this county are percentages of eligible cases.

² The August figure does not include Seattle. For the other months Seattle accounted for an average of 80 percent of the recipients.

Commodities Purchased With Blue Stamps: Comparison With Consumption Under the Direct Distribution Program and Other Low-Income Consumption

The quantities of the various commodities which participants buy with blue stamps are of considerable importance. To begin with, the commodities for which the consumers choose to spend their blue stamps will largely determine which groups of agricultural producers stand to benefit most from the stamp

plan. It is also informative to compare the quantities of the several surplus products bought by consumers under the plan with the quantities formerly distributed by the Surplus Marketing Administration and with average rates of consumption by other classes of consumers.



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FIGURE 6.—Percentages of blue stamps spent for the individual surplus commodities composing the successive surplus lists, July 16, 1939–June 1, 1940 (based on table 7). The introduction of pork (bottom diagram) caused a marked reduction in the percentages spent for butter, eggs, and lard. Purchases of fruits and vegetables, however, increased slightly in relative proportion because of the addition of citrus fruits to the list.

GENERAL PATTERN OF BLUE-STAMP EXPENDITURES

Since the stamp plan began operation, the surplus list has been changed several times. Some commodities have been on the list for the entire period to date, whereas others have been on for only a short time. The diagrams

in figure 6 (based on table 7) indicate the principal features of the expenditure patterns in each of three different surplus lists.¹⁵

¹⁵ The distribution of the blue-stamp expenditures among the commodities on the surplus lists was calculated from the reports of the sample of retail stores. Tally sheets were obtained from each store showing the number of units of each commodity sold and the prices. These values were expressed as numbers of blue stamps and the percentage distribution of total sales among the surplus commodities was calculated from the numbers of stamps.

TABLE 7.—Percentages of blue stamps spent for individual surplus commodities, by stamp cities ¹

Commodities	May 16- July 15			July 16-Sept. 30							Oct. 1-Dec. 15							Dec. 16-June 1					
	Rochester	Dayton	Weighted aver- age ²	Rochester	Dayton	Seattle	Birmingham	Pottawatomie County	Des Moines	Weighted aver- age ²	Rochester	Dayton	Seattle	Birmingham	Pottawatomie County	Des Moines	Weighted aver- age ²	Rochester	Dayton	Birmingham	Pottawatomie County	Des Moines	Weighted aver- age ²
Butter.....	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Eggs.....	31	26	29	28	23	26	20	13	19	24	29	28	26	20	12	25	26	19	16	10	7	14	15
Flour.....	8	10	9	9	9	12	23	29	16	13	17	10	13	24	26	13	16	10	9	21	20	11	12
Rice.....				1	2	2	3	4	2	2								1	2	2	2	1	1
Corn meal.....	.5	2	1	.4	2	.9	8	6	1	2	1	2	1	7	4	1	2	.4	2	6	4	1	2
Hominy grits.....																			.6	1	.2	.1	.3
Peaches.....				9	12	11	6	7	14	10													
Pears.....				.9	4	1	3	1	6	2	1	3	.4	1	.5	2	1	1	.2	.2	.1	.1	.3
Apples.....											5	8	10	6	11	12	8	3	6	3	5	6	4
Oranges.....	19	22	21															8	7	3	5	7	7
Grapefruit.....	4	7	5															2	4	1	1	3	3
Dried prunes.....	2	3	2	1	2	2	2	5	2	2	2	2	3	2	2	2	2	1	2	1	1	2	2
Raisins.....											2	2	2	2	3	2	2	1	1	1	2	2	1
Total fruits.....	25	32	28	11	18	14	12	14	22	14	10	15	16	11	17	18	13	16	20	9	14	20	17
Peas.....				2	3	.7	3	.4	1	2													
Tomatoes.....				9	10	7	6	4	3	8													
Snap beans ³3	1	.2	1	.2	.1	.6						
Cabbage.....				4	4	1	2	4	3	3													
Onions.....				4	4	2	2	3	5	3	3	4	2	2	2	3	3	2	2	1	1	1	1
Dry beans.....	2	4	3	1	4	2	7	11	6	4	2	5	3	7	7	4	4	1	3	6	6	3	3
Total vegeta- bles.....	2	4	3	20	25	13	20	23	17	20	5	10	5	10	9	7	8	3	5	7	7	4	4
Lard.....											6	13	4	15	22	9	10	3	6	11	10	5	6
Pork.....																		25	24	25	29	27	26

¹ The program began in Rochester on May 16, 1939; Dayton, June 5; Seattle, July 5; Birmingham, Aug. 1; Pottawatomie County, Aug. 16; and Des Moines, Aug. 23. The percentages above 1 have been rounded to the nearest unit and in some cases the additions differ from the group totals.

² In computing the weighted averages, the percentage distributions of the number of persons receiving public assistance in the States around each designated city have been used as weights.

³ Snap beans were on the list only during October. In that period they accounted for about 2 percent of the blue stamps.

For the two lists in effect during the period from July 16 to December 15, 1939, approximately one-fourth of the total blue stamps were exchanged for butter and another fourth for eggs. Cereal products (flour, corn meal,

rice) accounted for 10 to 17 percent of the blue stamps. From July 16 to September 30 when a relatively large number of fruits and vegetables were on the list, they obtained about one-third of the blue-stamp business.

From October 1 to December 15, apples and pears were the only fresh fruits on the list. They received 9 percent of the expenditures.

INFLUENCE OF CHANGES IN THE SURPLUS LIST ON BLUE-STAMP EXPENDITURES

The third diagram in figure 6 brings out the fact that changes in the list may drastically alter the expenditure pattern. Pork, the first meat to be placed on the list, took about one-fourth of the stamps, largely at the expense of butter, eggs, and lard.

The proportion of the total food expenditure used for cereal products has varied by region and by income level. It is apparent from figure 6, however, that the average blue stamp expenditure on the staples has remained relatively constant throughout the changes in the list. These foods represent the cheaper sources of food calories, and it is logical to assume that relief clients will buy all they require of these commodities before allocating their funds to other foods.

Length of the surplus list would also be expected to have a marked effect on the proportion of stamps spent for each commodity. The May 16-July 15 list (table 7) was so short that after a family had obtained all the staples it could use it had to turn to butter, eggs, and the citrus fruits to make up the remainder of the blue-stamp purchases. When the surplus list was subsequently lengthened, these large percentages of the blue-stamp expenditures for butter, eggs, and fresh fruits were considerably reduced.

The Department of Agriculture is not entirely without guides in estimating the probable effects of adding various foods or groups of foods to the surplus list. Data from the Study of Consumer Purchases¹⁷ provide an objective basis for classifying the various food groups in order of urgency of need. For example, the first three surplus lists did not include meats, but the last one did. From the relative income elasticities

of demand for the various commodities as indicated in the consumer-purchase study it would be expected that wheat products would be little affected by the addition of meats, but that fruits, eggs, dairy products, and possibly vegetables would be displaced. The experience since December 16, 1939, when pork was added to the list, bears out this conclusion.

REGIONAL DIFFERENCES IN BLUE-STAMP PURCHASES

Striking evidence of the differences in dietary habits and relief standards between regions is afforded by table 7. In Rochester and Seattle, and, to a lesser extent, in Dayton and Des Moines, purchases of butter and eggs were much higher than in Birmingham and Pottawatomie County. On the other hand, flour, corn meal, dry beans, rice, lard, and the locally grown, inexpensive, fresh vegetables were sold in much larger quantities in the southern cities. Sales of pork were approximately the same in all cities. This relative concentration on staples in the southern region and the greater purchases of "luxury" foods in the other areas are attributable to differences in relief standards and income as well as dietary habits. It is also important that no orange-colored stamps were required in Birmingham and that only a few of the relief categories had to buy them in Pottawatomie County. Stamp-plan participants who are required to buy orange stamps might naturally be expected to purchase those food staples not on the surplus list with the orange stamps, and to use most of their free blue stamps to buy such commodities as butter, eggs, vegetables, and citrus fruit. Those not required to buy orange stamps, on the other hand, may have tended to use their blue stamps to purchase the more essential foods, especially where their income from relief or other sources was very low. To the extent that they did so, there is indicated a greater substitution of blue-stamp purchases for regular purchases when orange stamps are not required.

¹⁷ These data are discussed in greater detail on p. 49.

QUANTITIES OF SURPLUS FOODS DISTRIBUTED BY MEANS OF STAMP PLAN

Conversion of the percentage expenditures of blue stamps on the various surplus commodities to a quantity basis makes it possible to compare the stamp purchases with average consumption of various consumer groups.

BLUE-STAMP PURCHASES COMPARED WITH UNITED STATES AVERAGE CONSUMPTION

Inspection of table 8 reveals that stamp-plan consumption of the surplus commodities is not generally higher than the national average.¹⁸ One would not expect low-income groups to maintain average consumption of such comparatively luxury foods as butter and eggs, but it is impossible to judge from these data how much of each commodity would have been purchased in the absence of the stamp plan. Participants in Rochester, Dayton, and Des Moines bought more butter and eggs, those in Birmingham and Pottawatomie County less, than the average consumption. Such items as dry beans, prunes, rice, and raisins were purchased in larger-

¹⁸ The United States averages are estimates of domestic disappearance or trade output. The basis of each is the Department's estimate of commercial production, and this is corrected for exports, imports, and carry-over. The difficulties of accounting for all the commercial production of these commodities are probably overshadowed in the instances of onions and butter by the problems of estimating farm-churned butter and local market-garden production of onions.

than-average quantities in all five localities and particularly in the southern areas.

BLUE-STAMP PURCHASES COMPARED WITH CONSUMPTION OF WAGE EARNERS AND CLERICAL WORKERS

For purposes of comparing per capita consumption of surplus commodities by stamp-plan participants with that of other people of like income status, the findings of a study by the Bureau of Home Economics are more useful than the domestic-disappearance data.¹⁹ The report of this study shows the actual home consumption of a large list of goods at various levels of food expenditure, divided on a regional basis, and it deals with a group which is fairly comparable with that participating in the stamp plan.²⁰

¹⁹ STIEBELING, HAZEL K., and PHIPARD, ESTHER F. DIETS OF FAMILIES OF EMPLOYED WAGE EARNERS AND CLERICAL WORKERS IN CITIES. U. S. Dept. Agr. Cir. 507, 141 pp., illus. 1939.

²⁰ The regional classification of the data made it possible to compare consumption in the various stamp-plan cities with that in the region in which each city is located. The data included only families with incomes of over \$500 during the year preceding the study who had received no relief whatever. However, differences in size of family resulted in a rather wide range of per capita incomes and consequently, of food expenditures. It is therefore probable that the expenditures of relief families would not be greatly different from those of the nonrelief families with low per capita food expenditures. The fact that the study was confined to the wage-earner and clerical-worker population in cities does not greatly affect the comparison since the stamp plan is, thus far, largely a city program and the participants mostly unemployed workers. The basic data for the wage-earner study are from about 2,500 families who provided complete records of food consumption for a week in each of four seasons of the year.

TABLE 8.—*Estimated monthly per capita quantities of commodities sold under the stamp plan compared with United States per capita consumption per month, 1928-37*

Commodity	United States consumption ¹	Estimated consumption under stamp plan in—				
		Rochester	Dayton	Birmingham	Pottawatomie County	Des Moines
Butter.....pounds..	1.46	2.56	1.58	0.86	0.73	1.64
Lard.....do.....	1.04	1.58	2.11	2.65	4.78	1.76
Eggs.....dozen..	1.73	2.36	2.20	1.57	1.16	2.06
Dry beans.....pounds..	.58	.93	1.32	1.70	2.25	1.28
Prunes.....do.....	.15	.39	.48	.45	.83	.46
Raisins.....do.....	.17	.55	.43	.31	.82	.65
Flour.....do.....	13.37	6.33	5.39	11.90	17.02	6.46
Corn meal.....do.....	1.07	.26	1.19	5.58	3.29	.84
Rice.....do.....	.47	.62	.87	1.25	1.00	.54
Dry onions.....do.....	1.19	2.98	2.48	.89	.96	2.48

¹ Division of Program Development and Coordination, Bureau of Agricultural Economics, U. S. Department of Agriculture, 1928-37 average. Estimates are based on domestic commercial production adjusted for changes in carry-over and for imports or exports.

² UNITED STATES BUREAU OF AGRICULTURAL ECONOMICS, FATS AND OILS SITUATION, August 1939.

The consumption figures from this study, commonly referred to as the wage-earner study, are compared with the blue-stamp purchases of surplus commodities in table 9.²¹ With few exceptions, the participants obtained more of each surplus product with their blue stamps than the low-income employed groups. This is probably explained by the fact that a larger portion of their food expenditures was confined to a restricted list of commodities. Nevertheless, this evidence that blue-stamp purchases

²¹ There were insufficient wage-earner records in some of the regions for a detailed breakdown of food consumption, and the published data are confined to white families in the North Atlantic, East North Central, East South Central, and Pacific areas, and to Negro families in the South. This excluded comparisons with Pottawatomie County and Des Moines; and (since the stamp plan data were not adequate for Seattle) only Rochester, Dayton, and Birmingham could be compared with the areas in which they are located. For a few of the surplus commodities there was no corresponding item in the wage-earner study. In such cases, the most closely comparable group of commodities was listed for whatever comparative value it might possess. Where possible, stamp plan consumption was compared with the consumption of families spending between \$1.25 and \$1.87 per capita per week for food. This is the expenditure range most comparable to the \$1.50 per week aimed at by the stamp plan, and the lowest one in which all the regions were represented in the wage-earner study.

of surplus foods were definitely heavier than normal is of interest. It indicates that blue-stamp purchases were considerably more than mere substitution for ordinary purchases of the surplus foods. The increases were substantial, sales of such important items as butter, eggs, and flour running as high as three and four times the average consumption of wage earners in Rochester and Birmingham. Important increases are shown also for corn meal and rice and several of the fresh vegetables in the two northern cities, though not in Birmingham, where normal consumption of most of these items tends to be higher than in the North.

Outstanding are the blue-stamp sales of fruits, both fresh and dried. They run several times as high as average consumption in almost every instance. This is a matter of interest from the viewpoint of nutrition as well as of agricultural economics, since fruits in general provide valuable nutritive elements all too often insufficiently supplied in the diets of low-income families.

TABLE 9.—Estimated monthly per capita quantities of commodities sold under the stamp plan in 3 experimental cities compared with monthly per capita consumption of white, low-income, employed workers in cities in 2 areas and white and Negro workers in cities in the Southeast

Commodity	White families, North Atlantic region ¹	Rochester ²	White families, East North Central region ¹	Dayton ²	White families, East South Central region ¹	Negro families, Southern region ¹	Birmingham ²
Butter.....pound..	1.15	2.56	1.30	1.58	0.30	0.69	0.86
Lard.....do.....	.28	1.58	.49	2.11	.83	2.41	2.65
Eggs.....dozen..	.95	2.36	2.07	2.20	1.35	.88	1.57
Dry beans.....pound..	.18	.93	.17	1.32	.75	.48	1.70
Prunes.....do.....	.08	.39	.19	.48	.03	.01	.45
Raisins.....do.....	.01	.55	.08	.43	.03	.00	.31
Wheat flour.....do.....	1.77	6.33	4.07	5.39	5.50	8.66	11.90
Corn meal.....do.....	.08	.26		1.19	3.02	5.11	5.58
Rice.....do.....	.26	.62	.13	.87	.48	.92	1.25
Cabbage.....do.....	.84	2.23	1.07	2.66	.83	3.15	1.75
Fresh peas.....do.....	.71	.36	.50	.75	1.68	.38	1.13
Tomatoes.....do.....	1.63	6.87	.92	4.46	4.49	1.49	1.92
Onions.....do.....	.66	2.98	.46	2.48	.79	.53	.89
Snap beans.....do.....	.79	.34	.92	.65	2.12	1.24	.70
Fresh peaches.....do.....	.55	5.11	.00	4.94	.74	1.40	1.98
Fresh pears.....do.....	.13	.98	.00	1.03	.00	.00	.86
Fresh apples.....do.....	.25	7.46	.97	4.67	.64	.71	2.44
Oranges.....do.....	1.06	7.07	1.87	6.62	.43	.03	(³)
Grapefruit.....do.....	.17	1.82	.00	3.00	.23	.00	(³)

¹ STIEBELING, HAZEL K., and PHIPARD, ESTHER F. DIETS OF FAMILIES OF EMPLOYED WAGE EARNERS AND CLERICAL WORKERS IN CITIES. U. S. Dept. Agr. Cir. 507, 141 pp., illus., 1939. The data (some unpublished) shown in this table are for families whose expenditures for food per person were in the range \$1.25-\$1.87 per week and refer to the summer season, June, July, August.

² Stamp-plan purchases, May 16-October 31, 1939. ³ Removed from the surplus list before introduction of the plan in Birmingham.

The Problem of Substitution and the Orange-Stamp Requirement

To maximize the effect of the Food Stamp Plan on farm income and to provide increased consumption of food among low-income families it is necessary that the blue stamps represent a net increase over the former food expenditures of participants and that they not be merely substituted for food expenditures which would have been made without the plan. As explained on pages 11 to 12, an attempt is made to prevent substitution by requiring those wishing to participate to buy minimum amounts of orange stamps in order to receive the free blue stamps. When the plan was started, the orange-stamp-purchase requirement was fixed at \$1 to \$1.50 per person per week on the assumption that this represented the normal range of food expenditure of relief families. Experience with the plan showed that this requirement had to be eliminated for some participants, at least in the beginning, because they did not have sufficient cash income to meet it. For other families the requirement seemed too low and steps were taken to raise it.

The purpose of this part of the report is to consider the extent to which the blue-stamp subsidy represents a net increase over the former food expenditures of participants. Several analytical approaches are possible, none of them altogether satisfactory for the problem. A number of studies showing average food expenditures of low-income families are available, and these expenditures are compared with the average food expenditures of stamp-plan participants. At the request of the Surplus Marketing Administration, the Bureau of Home Economics

made a special study comparing food expenditures of stamp-plan participants in Dayton, Ohio, with those of nonparticipants of similar economic status, and the results of this study are here presented briefly. In addition, effort was made to get at the problem through an analysis of wholesale and retail sales data in several stamp cities, with results to be described later. Present information does not permit precise determination of the extent to which consumers have substituted blue stamps for cash food expenditures, but there is at least some basis for estimate.

METHODS OF PREVENTING SUBSTITUTION AMONG CONSUMERS NOT REQUIRED TO BUY ORANGE STAMPS

In administering the stamp plan, the Surplus Marketing Administration did not find it feasible at first to require all participants to buy orange stamps. Many families on relief do not have enough cash income to buy a minimum of a dollar's worth of orange stamps per person per week; hence, in some cities participants were not required to make any orange-stamp purchases. In other cities, orange-stamp purchases below the minimum first determined upon (\$1 a person a week) were permitted. Moreover, in some cities general relief is given in the form of grocery vouchers rather than in cash. Grocery vouchers authorize the recipient to purchase food of a certain value; the storekeeper may give food but no cash to the bearer, the groceries being paid for by the local relief agency.

Table 10 shows the percentage of participants in the various cities during January

1940 who were required to buy orange stamps and those exempt from this requirement. It also shows what proportion of all the blue stamps was issued in connection with orange-stamp purchases and what proportion was issued separately.

In the 18 cities in which the program had been operating 1 month or more in January (including the first 6 cities) about 60 percent of the persons receiving blue stamps were buying orange stamps, 18 percent were receiving blue stamps with their grocery vouchers, and 22 percent were obtaining blue stamps without any requirement beyond eligibility. By May 1940 about 77 percent of the blue stamps issued were in connection with the purchase of orange stamps by those participating. Most of the persons given blue stamps without either buying orange stamps or receiving grocery vouchers were found in the South.

TABLE 10.—*Percentage of participants buying orange stamps, percentage receiving blue stamps with their grocery vouchers, and percentage receiving blue stamps only*¹

Date and areas	Participants—			Total
	Buying orange stamps	Receiving blue stamps with grocery vouchers	Receiving blue stamps only	
January 1940:	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Rochester, N. Y.	100.0	-----	-----	100.0
Dayton, Ohio.	51.7	48.3	-----	100.0
King County (Seattle), Wash.	67.0	33.0	-----	100.0
Jefferson County (Birmingham), Ala.	-----	-----	100.0	100.0
Pottawatomie County (Shawnee), Okla.	15.1	3.3	81.6	100.0
Des Moines, Iowa.	56.1	43.3	.6	100.0
Totals for 18 areas.	59.9	18.1	22.0	100.0
May 1940:				
Totals for 71 areas.	76.9	23.1	-----	100.0

¹ That is, receiving blue stamps only, without orange-stamp purchases or food vouchers; these persons receive no other public assistance, or relatively little.

² Percentage of total blue stamps issued in connection with orange-stamp purchases.

The fact that orange-stamp purchases are not required of all participants does not mean that the Department of Agriculture has no assurance that the stamp plan will not increase the food consumption of these people. When general relief is given in the form of grocery vouchers rather than cash, relief agencies enter into an agreement with the Surplus Marketing Administration not to decrease the amounts of these vouchers when the stamp plan goes into effect. If these agreements are faithfully kept, clearly the blue stamps will represent a net increase over the former food consumption of these participants. As 18 percent of all persons participating in the stamp plan in January received relief in the form of grocery orders, there is no serious problem of substitution in such cases.

There is a greater likelihood of substitution of blue-stamp purchases for usual purchases when relief is given in the form of cash. Before exempting persons receiving such aid from the orange-stamp requirement, the Surplus Marketing Administration obtains a promise from local relief agencies not to decrease the amount of cash relief. But even with this amount maintained there is the possibility that relief people may divert part of their former food expenditures to nonfood items as a result of receiving the blue stamps. There is, in fact, little more inducement to increase food purchases in such cases than there would be if additional cash were given instead of blue stamps.²²

ORANGE-STAMP PURCHASES COMPARED WITH USUAL FOOD EXPENDITURES OF RELIEF AND OTHER LOW-INCOME FAMILIES

The minimum orange-stamp requirement for participation was set at approximately \$1 per person per week, but the opportunity to

²² In Birmingham, Ala., all families received blue stamps without being required to make orange-stamp purchases. The food expenditures (excluding blue stamps) of 177 white and Negro W. P. A. families participating in the plan in Birmingham in March 1940, were found to be only 49 to 87 percent as large as those of 126 comparable families studied in Memphis, Tenn., where W. P. A. families bought orange stamps.

buy up to a maximum of \$1.50 worth of orange stamps per person per week has always been given. Within a few weeks after the plan was started, about two-thirds of the stamp purchasers in Rochester, N. Y., were buying more than the required minimum; in other experimental cities, more than half.

By May 1940, average expenditures for orange stamps by participants in the various experimental cities ranged from \$1.06 to \$1.29 per person per week, with the figure tending to increase from month to month in most cities (table 11). The value of the food represented by orange- and blue-stamp purchases (issued in the ratio of 2 to 1) therefore ranged from about \$1.60 to \$1.95 per person per week. Total food expenditures may have been even higher than this if the participants were spending any cash for food in addition to their investment in orange stamps.

This level of food consumption by stamp-plan participants may be compared with averages for nonrelief families of similar economic status, as shown by the Consumer Purchases Study. Table 12 indicates that for families in the North Central area average money expenditures of less than \$1 per person per week were made by families of four or more persons in the income class

\$250-\$499. Still larger families (six or more persons) spent an average of \$1 or less per person per week, even in the income class \$500-\$749. On the other hand, these studies indicate that comparatively few families of two or three persons spent as little as \$1 per person per week even when incomes fell in the class \$250-\$499. Large city families tend to spend more for the food of each person at each income level than do families of the same size living in villages and small cities.

For nonrelief families including as many members as the average found among families on relief, table 13 indicates the estimated food expenditures in different parts of the country in communities differing in degree of urbanization. Money outlays for food for families of four or more members in the income class \$500-\$749 indicate that the per capita expenditures for food of relief families of this size in large cities in the North and West might be expected to fall between \$1.25 and \$1.50 per person per week. Compared to these "normal" food expenditures, the weekly money value of food of stamp-plan participants amounting to \$1.60 to \$1.95 (orange-stamp and blue-stamp purchases) implies a definite increase in food consumption due to the stamp plan, although the increase is not in all cases equal to the full value of the blue stamps.

TABLE 11.—Value of orange stamps purchased per person per week in 3 regions, July 1939–May 1940¹

Region and city	1939						1940				
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Region No. 1:	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>
Denver.....						1.01	1.04	1.10	1.08	1.08	1.10
Salt Lake City.....					0.93	1.00	1.13	1.00	1.19	1.01	1.14
San Francisco.....							.92	1.06	1.07	1.11	1.11
Region No. 2:											
Dayton.....	1.06	1.04	1.06	1.09	1.10	1.11	.94	.88	1.13	1.14	1.11
Madison.....					.93	1.03	1.04	1.16	1.13	1.17	1.18
Springfield (Ill.).....					.88	.97	.99	.80	1.35	1.06	1.09
Des Moines.....				1.02	1.11	1.11	1.09	1.03	1.08	1.12	1.09
Region No. 3:											
Allentown-Bethlehem.....						.96	1.05	1.02	1.08	1.27	1.11
Pittsburgh.....										.97	1.06
Portland (Maine).....								.95	1.04	1.03	1.10
Providence.....							1.10	1.18	1.24	1.21	1.29
Rochester.....	.99	1.01	1.10	1.11	1.17	1.21	1.21	1.21	1.21	1.24	1.23

¹ In addition to the average orange-stamp expenditures indicated by the above figures, the participants received blue stamps equivalent to 50 percent of the value of the orange stamps for purchases of surplus foods. Consequently, their total expenditures for food were 50 percent greater than the weekly figures shown above.

TABLE 12.—*Money expenditures for food by white nonrelief families according to expenditure for living and family size, in localities representing 3 degrees of urbanization in the North Central States, 1935-36*¹

Locality and money expenditure for living (in dollars)	Per capita expenditures for food in a week by families with members numbering—					
	2	3	4	5	6	7
46 North Central villages:	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>	<i>Dol.</i>
250-499.....	1.55	1.15	0.90	0.75	0.65	0.60
500-749.....	2.25	1.70	1.30	1.10	1.00	.90
750-999.....	2.70	2.10	1.65	1.45	1.30	1.20
7 small North Central cities:						
250-499.....	1.65	1.25	1.00	.75	.60	.50
500-749.....	2.40	1.75	1.35	1.15	1.00	.85
750-999.....	3.10	2.15	1.70	1.45	1.30	1.20
Chicago:						
500-749.....	2.50	2.00	1.75	1.55	1.45	1.35
750-999.....	3.40	2.50	2.10	1.85	1.65	1.50

¹ Estimates made by the Bureau of Home Economics from published and unpublished data of the Consumer Purchases Study made by the Bureau of Labor Statistics and the Bureau of Home Economics with the collaboration of the National Resources Committee, 1935-36.

That the range of \$1.25 to \$1.50 probably represents the usual level of expenditure for food by relief families of average size in large cities of the North is confirmed by two studies made by the Bureau of Home Economics in 1938-39 at the request of the Surplus Marketing Administration regarding food expenditures and food consumption of families on relief. The average money expenditures among Negro and white families on relief in the southwestern part of Washington, D. C. (where the stamp plan was not in effect) was about \$1.30 per person per week. This study included a 75-percent coverage of all families in the southwestern section of the city that were receiving or were certified to receive direct relief or that had employment on W. P. A. projects or were awaiting assignments by that agency.

In Dayton, Ohio (where the stamp plan was operating), the average money expenditure (including orange stamps but not blue stamps) of white families of two to seven persons was \$1.75 for those participating on the orange- and blue-stamp basis and \$1.54 for general-relief clients receiving blue stamps in connection with their grocery vouchers.

TABLE 13.—*Average size of families on relief and estimated per capita expenditures for food of nonrelief families of comparable size at 3 levels of living,¹ relief² families including husband and wife, both native-born unless otherwise indicated, nonrelief families including husband and wife, both native-born, 1935-36*

Kind and location of family	Average size of families on relief	Estimated ³ per capita expenditures for food of nonrelief families of comparable size when all expenses for living are—		
		\$250- \$499	\$500- \$749	\$750- \$999
White families:	<i>Persons</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
New York.....	4.1	(1.40)	2.20	2.50
Chicago.....	4.3	(1.10)	1.70	2.00
Large cities:				
Columbus, Ohio.....	4.4	(1.00)	(1.50)	(1.80)
Omaha, Nebr.....	4.3	(1.00)	1.40	1.55
Denver, Colo.....	3.9	(1.00)	1.15	1.75
Washington, D. C. ⁴	4.9	(1.00)	(1.40)	(1.75)
Atlanta, Ga.....	4.6	(.90)	1.35	1.70
Middle-sized cities:				
Middle Atlantic and North Central.....	4.3	(1.00)	(1.50)	(1.80)
West Central.....	4.1	1.30	1.50	1.85
Southeast.....	4.7	.90	1.25	1.50
Small cities:				
Middle Atlantic and North Central.....	4.4	.90	1.25	1.60
Plains and Mountain.....	4.5	.65	1.15	1.40
Pacific Northwest.....	3.9	1.15	1.40	1.80
Southeast.....	4.8	.75	1.05	1.50
Villages:				
Middle Atlantic and North Central.....	4.3	.85	1.25	1.60
Plains and Mountain.....	4.7	.60	1.10	1.50
Pacific.....	4.0	.90	1.35	1.70
Southeast.....	4.5	.75	1.10	1.35
Negro families:				
New York.....	3.9	(1.15)	(1.70)	1.80
Large cities:				
Columbus, Ohio.....	4.1	(1.00)	(1.40)	(1.65)
Washington, D. C. ⁴	4.4	(.80)	(1.25)	(1.50)
Atlanta, Ga.....	4.3	.70	1.10	-----
Middle-sized cities, Southeast.....	4.3	.70	1.00	1.50
Small cities, Southeast.....	4.3	.70	1.05	1.50
Villages, Southeast.....	4.0	.80	1.15	-----

¹ Except where otherwise noted, data is from the Consumer Purchases Study made in 1935-36 by the Bureau of Labor Statistics and the Bureau of Home Economics with the collaboration of the National Resources Committee.

² Families receiving any relief, however little.

³ Figures in parentheses are interpolated.

⁴ Family size from special study, Bureau of Home Economics—all families on relief and having W. P. A. employment, 1938-39; food expenditures interpolated from data of North and Southeast.

The special food study in Dayton included only families of two to seven persons²³

²³ Two adults with none to five children under 16 years; three adults with two to four children under 16 years; four adults with one to three children under 16 years; five adults with one or two children under 16 years.

omitting white families of three to seven persons of certain household compositions, all white families of eight or more persons, and all Negro families. Consequently, the average money expenditures shown by the special study undoubtedly are higher than those of all Dayton stamp-plan participants.

Classification of these groups on the basis of their money expenditures for food (value of donated surplus commodities and blue-stamp purchases excluded) is shown in table 14.

These figures indicate that many W. P. A.-employed families, in cities where the wage rate is relatively high, spend more than the maximum amount that up to the present time may be invested in orange stamps. Judging from table 12, many of the families spending \$1.50 or more per person per week for food probably are families of less than average size.

INFLUENCE OF THE STAMP PLAN UPON FOOD EXPENDITURES OF PARTICIPANTS

Data showing the influence of the stamp plan on family food consumption are as yet available only from the study made by the Bureau of Home Economics in Dayton, Ohio, reported in greater detail on pages 66 to 79. In this study the expenditures of participants in the stamp plan for all food and for foods on the surplus list were compared with the expenditures for food of nonparticipants of like economic status. W. P. A. participants in that city obtain blue stamps in connection with the purchase of orange stamps. General-relief persons receive grocery vouchers so that blue stamps are issued without any orange-stamp-purchase requirement.

A comparison of 247 families using both orange and blue stamps with 247 nonparticipating families of comparable household composition and income status²⁴ showed significant differences in food purchases. Purchases of foods on the surplus list by the

²⁴ The average household size of each group was four, and the average income \$73 to \$74 per month.

participating families averaged about 50 percent higher than for the matched group of nonparticipating families.²⁵ Their total food purchases averaged about 15 percent higher. The difference in total food expenditure, 26 cents per person per week, was about 60 percent of the value of the blue stamps they received.²⁶ In other words, this percentage of the blue stamps appeared to represent the net increase in the food expenditures of families using both orange and blue stamps.

TABLE 14.—*Percentage distribution of relief and W. P. A. families in Washington, D. C., and Dayton, Ohio, by weekly food expenditure per person, 1938-39*

City, type of relief, and kind of family	Families spending per person per week for food ¹		
	Less than \$1	\$1 to \$1.49	\$1.50 and over
Washington, D. C. (southwestern section):			
Direct-relief and W. P. A.-employed recipients of surplus commodities: ²			
White families (63 percent W. P. A.-employed).....	Percent 37	Percent 23	Percent 40
Negro families (50 percent W. P. A.-employed).....	48	27	25
Nonrecipients of surplus commodities: ²			
White families (81 percent W. P. A.-employed).....	7	12	81
Negro families (82 percent W. P. A.-employed).....	21	23	56
Dayton, Ohio:			
Food Stamp Plan participants, white families (two to seven persons):			
W. P. A.-employed.....	9	33	58
General relief ³	14	40	46

¹ Excluding value of donated surplus commodities or blue-stamp purchases.

² Only the neediest families on direct relief or employed on W. P. A. projects were certified for surplus commodities.

³ Including value of food obtained with grocery voucher.

²⁵ Purchases reported as made with blue stamps amounted to more than 90 percent of these participants' supply of foods on the surplus list.

²⁶ Although the minimum investment of orange stamps (roughly \$1 for each family member a week—more precisely, 93 cents) theoretically would have given participants 46 cents worth of blue stamps for each person per week, the average value of food reported as obtained with blue stamps amounted to only 43 cents per person in a week. This is due mainly to the fact that the average number of persons fed from the family food supply during the week of the study exceeded the average size of family listed as eligible for stamp purchases by not less than 5 percent. In addition, there may have been occasional failures to report completely which of the foods listed as surplus were obtained with blue stamps.

The remaining 40 percent of the blue stamps apparently were substituted for cash food expenditures which they would have made had they not been participating in the stamp plan.

Among participating families receiving grocery vouchers and blue stamps, and hence not buying orange stamps, total food expenditures approximated closely the combined value of vouchers and blue stamps. For grocery-voucher participants, therefore, the stamp plan appeared to increase food consumption by approximately the full value of the blue stamps.²⁷

INDICATIONS FROM SALES DATA

An effort was made in connection with this study to measure the increase in food sales attributable to the stamp plan by analyses of wholesale and retail sales data in the six experimental cities. Short summaries of these analyses will be found in the appendixes.

Since blue-stamp purchases represent only about 4 or 5 percent of total food sales in areas where the plan is operating, it is obviously necessary to get very accurate data to measure a change of this small magnitude. Moreover, the effect of the plan on total food sales is likely to be obscured by the influence of other factors such as changes in employment conditions, price levels, and factors peculiar to individual firms. Data as to wholesale food sales (shown in the appendixes) indicate that in some cities the total volume of food business went up and in some cities it went down following the inauguration of the stamp plan, but for reasons just stated these changes indicate nothing as to the effect of the plan on food sales.

The Economic Analysis Section of the Surplus Marketing Administration undertook a different type of analysis, based on a comparison of sales in a sample of retail

²⁷ Although these families limited their purchases of the foods on the surplus list practically to those that could be made with blue stamps, their resulting consumption of surplus foods averaged 60 to 85 percent higher than among families spending similar amounts for food but not receiving blue-stamp subsidy.

stores in low-income areas with those of stores in high-income neighborhoods where the stamp plan had little or no effect. These sales' records were analyzed in detail in an attempt to learn the extent to which the blue stamps represented a net increase in the expenditures for food as a whole and for particular foods. The kind of analysis that has been made is indicated in the appendixes. It was found that the results differed a great deal from one city to another. Although some of this variation may represent real differences that can be explained, a considerable part of the variation may be due to inaccuracies in the store records and to the small size and possible lack of representativeness of the store sample.

New studies now in progress by the Economic Analysis Section of the Surplus Marketing Administration involving sales and family-expenditure data may throw new light on the effect of the stamp plan on food sales and consumption. At present, however, the writers believe the most reliable estimates that can be made with respect to this are based on the other sources discussed in the last several pages.

CONCLUSIONS REGARDING THE DEGREE OF EXPENDITURE SUBSTITUTION

It is patent that the extent to which blue stamps are substituted for regular food expenditures will have a great deal to do with the effect of the stamp plan on farm income. Despite the efforts thus far made to measure this, it is evident from the foregoing pages that no very definite conclusions can be drawn from the available data, although we are not without some basis for judgment.

When relief is given in the form of grocery vouchers, as it is to about 18 percent of the people now participating in the stamp plan, there appears to be no serious problem of substitution if arrangements are made with local relief agencies to maintain the preplan relief allowances for food. If these allowances are maintained, it is obvious that the

blue stamps represent a net increase in the food purchases of participants.

When relief is given in the form of cash and when so little cash is given that participants cannot be required to buy orange stamps, there is no assurance that the Federal subsidy will represent a net increase in the food consumption of the participants. In such cases the effect of the program on food consumption is perhaps not greatly different from what it would be if the participants were simply given cash, although it is certain that at least some considerable part of the subsidy will go for additional food.

The remainder of the stamp-plan participants (receiving about three-fourths of the total blue stamps in May 1940) are required to buy orange stamps on the assumption that the requirement of \$1 to \$1.50 per person per week is equal to their average pre-plan food expenditures. The Consumer Purchases Study indicates that this range might be near the average for many relief people, although undoubtedly many family groups among W. P. A. people and those with liberal cash-relief allowances exceed the average.

At the same time, this study indicates that the majority of stamp-plan participants are buying more than the minimum amount of orange stamps, the range of averages in various cities being from \$1.05 to \$1.30 per person per week. Since blue and orange stamps are issued in the ratio of 1:2, this means that those participants who buy orange stamps get from \$1.55 to \$1.95 worth of food per person per week and may be spending more if they use any cash in addition to their stamps. This represents a level of food consumption well above that of the lowest income families as found by the Consumer Purchases Study and is also considerably above the estimated average expenditure of W.P.A. employed families of more than 3 persons and of other public-assistance categories in most cities.

In the judgment of the writers, based on

first-hand observation of the operation of the plan as well as on the available statistical evidence, a conservative estimate would be that about 75 percent of the value of the blue stamps has represented a net increase in the food expenditure of the participants. In other words, only about 25 percent of the blue-stamp subsidy has been substituted for regular food purchases and hence has been without effect either on farm income or on the quantity of food consumed by relief people, though it obviously must increase their total welfare. With modifications in the operation of the stamp plan (some have already been made and others will be made in the future) this degree of substitution could probably be reduced even below what it now is.

MODIFICATIONS OF THE ORANGE-STAMP REQUIREMENT

It is generally agreed that a minimum orange-stamp requirement equal to some assumed average food expenditure is not practicable for all types of relief cases in all parts of the country. If the many people who do not have enough cash income to buy the present required number of orange stamps were held to this requirement, they could not participate in the plan. The Surplus Marketing Administration has recognized this, of course, and in the southern region, where levels of relief tend to be especially low, the procedure in the initial cities was to ascertain whether the minimum orange-stamp requirement was practicable and, if not, to issue blue stamps only. But this procedure did not provide any assurance that stamp-plan participants would maintain their normal food expenditures, and was probably not greatly different in its effect on food consumption from giving them a like amount of cash. Increasing efforts have therefore been made to modify the basis of stamp issuance so as to provide a more flexible means of encouraging purchases of orange stamps.

MODIFICATIONS ALREADY MADE

Several modifications in the original orange-stamp requirement have already been made by the Surplus Marketing Administration. Among the steps already taken are the following:

(1) Effective April 1, 1940, the use of orange stamps has been limited to food only.²⁸ This should have the effect of reducing substitution about 3 to 10 percent. In the opinion of administrative officials of the Surplus Marketing Administration it will also further minimize "chiseling," which sometimes began because of the loose construction placed upon the interpretations of the use of orange stamps.

(2) Adjustments have been made in the participation requirements for large families so that, as a general rule, not more than 50 percent of their public-assistance benefit will be required for orange-stamp purchases.

(3) Single-person families have been barred for the most part, from participation, for frequently they are not householders, and in many cases they have sufficient cash resources for an adequate level of living.

(4) Where the relief levels are much below the national average, blue stamps are given on the basis of 50 cents per person per week, although participants are required to spend only 50 percent of their public-assistance grant for orange stamps. This has the effect of substantially increasing the ratio of blue stamps to orange above the most commonly used ratio (that is, more than 1 : 2).

(5) In a number of cases, welfare departments have been induced to pay out their food vouchers in orange stamps on a basis that does not reduce the present food budget. This has the advantage to the welfare agency of reducing its audit costs, which in some cases are reported to be as much as 61 cents per food voucher.

(6) In some instances, welfare departments have been induced to raise their level

of relief from a lower rate to \$1 per person per week for food.

(7) Steps have already been taken to raise the minimum orange-stamp-purchase requirement to \$1.50 for the smaller families in a number of areas and for all families in some localities where food allowances permit.

(8) At the same time, in all the areas in which the stamp plan has been inaugurated, a complete review of the formula for the issuance of stamps is being undertaken. It is believed that this will greatly reduce, and in the long run completely eliminate, the issue of blue stamps alone where no precautions are taken to safeguard regular purchases. In working out the formula for the stamp issuance, care is being taken to certify the entire "family-table groups," that is, to provide for orange-stamp purchases for all of the members of the household.

All of these steps indicate a great deal of flexibility and, in fact, a departure from the minimum requirement ordinarily thought to be standard procedure. In essence they have two characteristics. They keep the formula for blue-stamp distribution between 50 cents and 75 cents per person per week. They seek to adjust the orange-stamp requirement to the maximum that the person can afford (and is now spending) up to \$1.50 per person per week. They reflect the increasing conviction drawn from observation of the working of the program that from the viewpoint of the farmer, and for the purpose of increasing food consumption, the orange-stamp requirement is the very heart of the program.

A FURTHER PROPOSAL

An alternative approach would be to put less emphasis on any fixed orange-stamp minimum and more on methods of maintaining normal food expenditures by means of inducement. The Food Stamp Plan, as now operating, already embodies this general principle in that it offers participants more blue stamps with increases in the amounts

²⁸ Up to April 1, orange stamps could be used to purchase nonfood household items regularly sold in retail food stores.

of orange stamps purchased, and in some cases increases the ratio of blue stamps considerably beyond the standard ratio of 1 to 2. The fixed ratio of orange to blue stamps tends to benefit unduly those participants who can afford to buy the larger amounts of orange stamps.

The suggestion here is for a reduction in the minimum orange-stamp requirement, with a graduated ratio of orange and blue stamps. Persons who could not afford to buy, each week, orange stamps worth \$1 would be allowed to buy, say, as little as 50 cents' worth, receiving free an equal quantity of blue stamps. Those who chose to receive more blue stamps could do so by buying a larger quantity of orange stamps, although the ratio of blue to orange stamps would decrease with the amount of orange stamps purchased.

An obvious advantage of such a proposal would be that it would not exclude those who do not have enough cash income to participate under the present orange-stamp requirement. At the same time it would offer the incentive to maintain, or even to increase, the participant's normal food expenditures because, by purchasing more orange stamps, the participant could obtain more free blue stamps. The present option to buy more than the minimum amount of orange stamps, of course, offers this same incentive; the new proposal merely changes the ratio of orange and blue stamps and extends the

range between the minimum and the maximum.

A disadvantage of the proposal is that this new procedure might be somewhat more difficult to administer than the present scheme, but this difficulty may not be insurmountable if carefully explained to participants. Unfortunately, the persons with the lowest cash incomes who most need the blue stamps would not receive as many as those who could afford to buy more orange stamps. This same disadvantage exists under the present \$1-minimum arrangement, where it is even more serious because the ratio of orange and blue stamps is not graduated. Finally, there is the possibility that if the participants did not take advantage of the opportunity to get increased purchasing power there could be very nearly complete substitution of blue-stamp purchases for usual purchases. Experience to date indicates, however, that an increase in free blue stamps with increased orange-stamp purchases encourages purchases beyond the minimum requirement.

The graduated principle might also be applied to the problem of family size. Large families might be given a higher ratio of blue to orange stamps than small families. Reducing their minimum orange-stamp-purchase requirements to as little as 50 cents should enable them to come into the plan on a basis compatible with their cash income and their food-consumption habits.

Factors To Be Considered in Selecting Commodities for Surplus List

The basic authority under which the Food Stamp Plan is operated is found in Section 32, Public 320 (1st sess. 74th Cong.) as amended. The authority conferred under section 32 is extremely broad, as it provides that sums appropriated shall be used—

* * * to (1) encourage the exportation of agricultural commodities and products thereof * * * (2) encourage the domestic consumption of such commodities or products by diverting them, by the payment of benefits or indemnities or by other means, from the normal channels of trade and commerce or by increasing their utilization through benefits, indemnities, donations or by other means, among persons in low-income groups as determined by the Secretary of Agriculture; and (3) finance adjustments in the quantity planted or produced for market of agricultural commodities. The amounts appropriated * * * shall be expended for such of the above-specified purposes, and at such times, in such manner, and in such amounts as the Secretary of Agriculture finds will tend to increase the exportation of agricultural commodities and products thereof, and increase the domestic consumption of agricultural commodities and products thereof.

The only specific requirement of the legislation, then, is that the Secretary of Agriculture must find that the domestic consumption of certain foods will be increased by placing them on the surplus list under the stamp plan. In greater or less degree the consumption of any commodity would be increased by placing it on the list, so that the selection of commodities becomes largely a matter of administrative discretion.

The number and kind of agricultural products put on the surplus list are important considerations for both farmers and consumer participants. They will affect the distribution of benefits among producer groups as

well as the dietary standards of low-income consumers. In selecting commodities for the surplus list, consideration should therefore be given to (1) commodities the prices of which are most depressed, (2) commodities for which the plan would be most effective in increasing consumption and improving the price situation, and (3) commodities which offer the greatest improvement to the diets of low-income consumers, cost considered.

In judging which agricultural products are in greatest distress, it does not appear necessary to adopt any exact formula. Pre-war or post-war parity serves as a useful guide, but it may not always indicate the relative distress among different groups of producers, and certainly it should not be the only criterion by which surplus commodities are selected. Whenever the price of any agricultural product is considerably lower than usual, or its supply considerably greater, the Department of Agriculture might well conclude that there is a surplus of this particular commodity.

GREATER FLEXIBILITY FOR LOCAL SURPLUS SITUATIONS

For many agricultural products, especially the perishables, the surplus may be of local rather than national character. The supply of eastern tomatoes, for example, might be such that the growers would be in great distress in the East, but this fact might not warrant adding tomatoes to a national surplus list, nor would the New Jersey growers be helped by listing tomatoes in consuming areas where their crop was not normally sold.

The obvious solution is to make the surplus list flexible as between regions to take care of local surpluses. For the staple farm products, like meats, butter, and cereals, and for many perishables, the market is Nation-wide, and these commodities might well be added to the list in all cities where the stamp plan is in operation. But there may be area surpluses of commodities like fruits and vegetables for which national designation is not warranted. In such instances, the commodity should be designated as a surplus only in those areas in which it is consumed. Since June 1940, this flexibility has been attempted in the designation of vegetables for the stamp plan.

ELASTICITY OF DEMAND FOR DIFFERENT FARM PRODUCTS

General principles governing the effect of the stamp plan on farm income were discussed on pages 17 to 19. It was shown that the effect depends primarily on: (1) The amount of the blue-stamp subsidy; (2) the elasticity of the demand for all foods on the part of high-income (nonparticipating) consumers; and (3) the extent to which the blue stamps represent a net increase over the former food expenditures of participants.

The problem of gaging the effect of the plan on particular farm products, however, is slightly different from the analysis for all foods. As blue stamps represent additional purchasing power which consumers may distribute as they choose between the various items on the surplus list, the way they distribute these expenditures in relation to their former expenditures for each commodity will affect the distribution of benefits among the various producer groups. It is undoubtedly true that some types of commodities will benefit much more than others.

Some indication of which types of commodities are likely to benefit most under the stamp plan may be had from figure 7, which shows the relationship between consumer income and the per capita consumption of various groups of foods, as indicated in

preliminary information from the Consumer Purchases Study. The findings indicate that the consumption of fruits, meats, eggs, and dairy products, tended to increase sharply with increases in income; whereas consumption of other commodities, such as rice, flour, and lard, was relatively constant regardless of the income level.

The added purchasing power represented by the blue stamps is not strictly analogous to a proportionate increase in cash income because the blue stamps may be spent only for a restricted list of surplus food products. But the allocation of the additional purchasing power made possible by the blue stamps may reasonably be expected to follow a pattern somewhat similar to that indicated by figure 7.

That the stamp plan has had an effect on consumption of individual surplus commodities similar to what might have been expected on the basis of income elasticity is indicated by table 15. The figures in this table were obtained by the Bureau of Home Economics from its study of the effect of the stamp plan on consumers in Dayton. (See pp. 77 to 79 for a more complete discussion of this study.) These data compare the per capita consumption of individual surplus commodities by stamp-plan participants with the consumption of nonparticipating relief families of like size and income status in that city. Differences in consumption were much greater for some commodities than for others, indicating that the stamp plan tended to increase the sales of some surplus commodities much more than others. The largest increases were noted for butter, eggs, and fruits and vegetables. Consumption of grain products (except rice) appears to have been increased only slightly by the stamp plan in Dayton.

But the greatest benefits to producers will not necessarily occur in commodities on which low-income consumers show the greatest increases in consumption. The important thing from the producer's viewpoint is the price rise that results, and this depends

not only on the increase in the demand of participants in the plan but also on the reaction of nonparticipating families to this increase. If their demand for a commodity is highly inelastic, the chief effect will be a rise in the price of the commodity, with corresponding benefits to its growers. If their demand is elastic, on the other hand, the price rise for the commodity in question will be small, and the chief effect will be to enable participants in the plan to consume more of it.

Not enough is known at present about demand elasticities and consumption habits

to predict with precision how the stamp plan will affect the sales of individual commodities on the surplus list. Obviously the effect will vary, depending on the number and type of commodities listed. On the basis of the experience and the data now available, however, it can be said with reasonable certainty that commodities like fresh fruits and dairy products, which low-income consumers do not commonly get in the quantities they wish, will show greater increases in demand than things like cereal products, which they are already consuming in relatively large quantities.

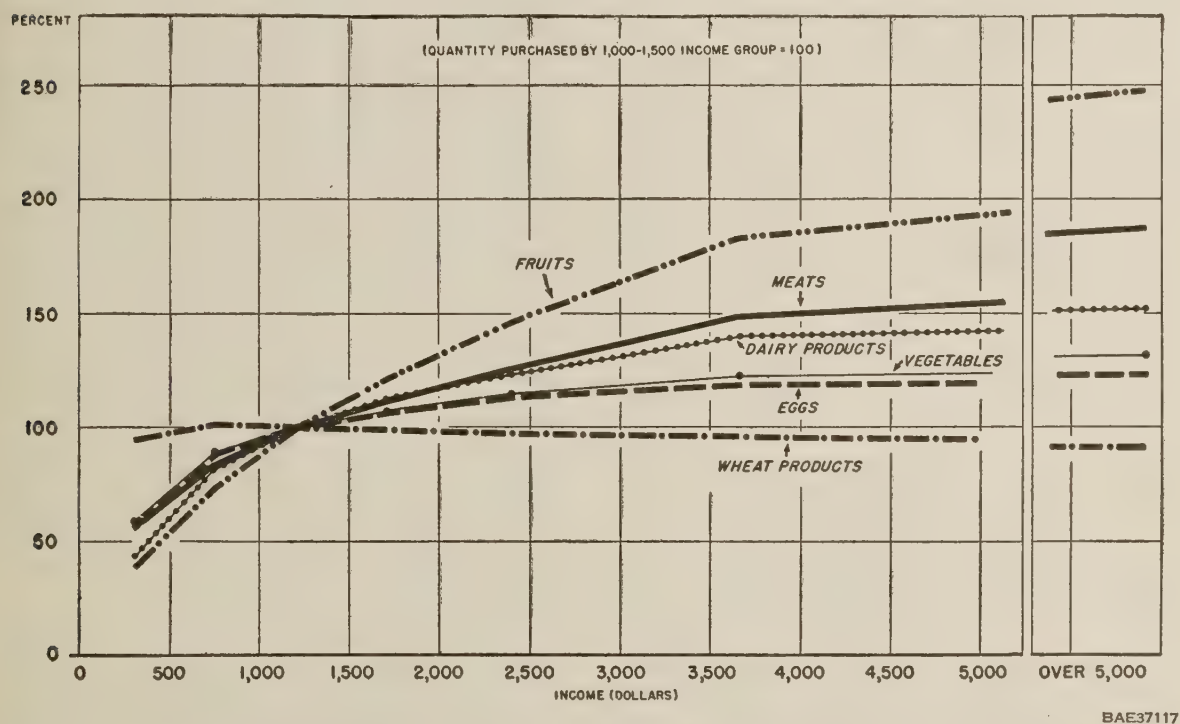


FIGURE 7.—Relation between incomes of nonfarm, nonrelief families and their purchases of fruit, meat, dairy products, vegetables, eggs, and wheat products, 1935-36. Although the blue stamps that families receive are not spent in the same way as cash increases in income would be, it is to be expected that families participating in the stamp plan will increase most markedly their purchases of the types of commodities which normally show the greatest increase in consumption with increasing income. (From estimates made by the Marketing Division, Surplus Marketing Administration, from data obtained by the Bureau of Labor Statistics and the Bureau of Home Economics in collaboration with the National Resources Committee, January 2, 1940.)

TABLE 15.—*Ratio of weekly consumption of surplus commodities by stamp-plan participants to consumption of nonparticipating relief people*

Commodity	Consumption of participants divided by consumption of nonparticipants		
	Orange-stamp participants ¹	Grocery-voucher participants spending per person per week for food— ²	
		\$1.00–\$1.49	\$1.50–\$1.99
Butter.....	1. 51	1. 95	1. 75
Eggs.....	1. 48	1. 60	1. 62
Wheat flour.....	1. 08	1. 38	1. 47
Corn meal.....	. 71	1. 07	2. 25
Rice.....	1. 52	1. 83	2. 17
Cabbage.....	1. 36	1. 87	. 91
Peas, fresh.....	6. 57	9. 00	6. 00
Onions.....	1. 10	1. 28	1. 16
Tomatoes.....	1. 07	1. 22	1. 46
Peaches.....	2. 55	3. 63	2. 72
Pears.....	3. 47	(³)	4. 67
Dry beans.....	1. 29	1. 13	1. 53
Dried prunes.....	3. 14	3. 00	3. 50

¹ These data are based on an analysis by the Bureau of Home Economics of weekly food consumption of 247 Dayton families participating in the stamp plan as compared with the purchases of an equal number of nonparticipating relief families in the same city, matched as to family size and income status.

² These data are based on an analysis of the weekly per capita food consumption of participants and nonparticipants, classified by money expenditures for food (blue-stamp purchases omitted).

³ Negligible quantity consumed by nonparticipants in this money-expenditure category.

PROCESSING AND MARKETING COSTS AS A FACTOR IN SURPLUS DESIGNATION

Another factor to be taken into account in the selection of surplus products is the cost of processing and marketing the commodity. To some extent, increases in consumer expenditures will tend to be more fully reflected in farm incomes in the case of unprocessed commodities for which the farm price is a high percentage of the retail price than in the case of those for which the opposite is true.

But it is easy to fall into confused thinking on this point. If the current supply of a commodity is fixed and would be marketed in the absence of the stamp plan, then the proportion of the retail price normally received by the producer will have comparatively little to do with the effect of the stamp plan on farm income from the commodity.

Even though the farmer normally received only 10 or 15 percent of the retail price (as is the case with some commodities), most of the added consumer expenditure would be reflected to him. Even here, however, there will be some increase in marketing charges associated with the rise in price of the commodity under the plan, and these will tend to absorb a larger proportion of the farmer's benefit where numerous processing and marketing steps are involved than where there are few. Also, the greater the number of exchanges through which the commodity passes and the longer the time between production and consumption, the less immediately responsive the farm price is likely to be to changes in consumer demand.

If the effect of the stamp plan is such as to result in an immediate increase in the supply marketed, there are much stronger grounds for giving preference to commodities for which the marketing costs are relatively small. The reason is that on the increased part of the supply the farmer will receive only that share of the consumer's expenditure represented by his normal share of the consumer's dollar. Many commodities, especially of the highly processed kinds, such as breakfast foods, are capable of quick supply changes. If such commodities are put on the surplus list, it should be understood that farmers will receive only part of what consumers pay for the *additional* part of the supply.

The same principle applies to long-run changes in supply resulting from increased production. Insofar as the stamp plan would tend to increase farm production, the farmers would receive a smaller part of the blue-stamp expenditures on the additional supply than on the original volume, because the total marketing bill for the larger supply would be increased.

NUMBER OF COMMODITIES ON SURPLUS LIST

It is evident that the number of commodities on the surplus list will determine in large measure the extent of the gain to any particular group of producers. If the list is

short, the added purchasing power represented by the blue stamps will be concentrated on a relatively few products, and the gains to the producers of these particular products will be substantial. If the list is long, on the other hand, no single group of producers will benefit greatly, as the added purchasing power will be spread thin over a large number of commodities.

This is accentuated by the fact that under the present arrangement it is impossible to prevent some substitution of the blue-stamp subsidy for ordinary purchases of the surplus foods. Recipients are able to use blue stamps for normal purchases of surplus commodities, which frees a corresponding amount of purchasing power for additions to their consumption of nonsurplus foods. In the extreme case, if the surplus list is so large as to include foods for which the participants would ordinarily spend 50 percent of their food money, all of their blue stamps could be used up on these normal purchases so that, in effect, the participants would be free to spend their subsidy on any foods they wished. In such a situation there might as well be no surplus list—producers of the commodities listed would stand to gain no more by the plan than producers of any other foods. Benefits to agriculture as a whole would not be lessened by this, but they would no longer be directed to selected commodities.

Obviously, therefore, if important benefits are to be directed in favor of particular producer groups under the stamp plan, it is essential that the surplus list be kept short. But this will make the plan less attractive to consumers. Consumers who are required to buy orange stamps will obviously have less incentive to participate if the surplus list is short or made up of commodities for which they do not ordinarily spend much money. Certainly few of them will purchase more than the bare minimum of orange stamps if the extra blue stamps they might thus obtain can be spent only for a few commodities.

The proportion of normal food expenditures represented by the various surplus

lists thus far designated under the stamp plan is shown in table 16. This proportion has varied from about one-fifth to one-fourth for the earlier lists to as high as one-third for the December 16–June 10 list.

TABLE 16.—*Approximate proportion of total food expenditure going to surplus products among low-income nonfarm, nonrelief families, 1935–36*¹

Commodities	Approximate percentage of total food expenditure—	
	By families receiving less than \$500 per year	By families receiving \$500 to \$1,000 per year
	Percent	Percent
Butter.....	4.8	5.3
Eggs.....	5.7	5.4
Wheat flour.....	5.3	2.4
Corn meal.....	1.2	.7
Rice.....	1.0	.4
Peaches.....	.3	.2
Pears.....	.1	.1
Apples.....	.4	.8
Oranges.....	1.0	1.6
Grapefruit.....	.1	.2
Dried prunes.....	.2	.2
Raisins.....	.1	.1
Peas.....	.4	.4
Tomatoes.....	.8	1.3
Cabbage.....	1.0	.6
Onions.....	.5	.5
Dry beans.....	.8	.5
Lard.....	3.7	2.0
Pork.....	9.6	7.1
May 16–July 15 list.....	19.1	16.3
July 16–Sept. 30 list.....	22.2	18.0
Oct. 1–Dec. 15 list.....	23.7	18.7
Dec. 16–June 10 list.....	34.7	27.4

¹ Preliminary data based on the Consumer Purchases Study made by the Bureau of Labor Statistics and the Bureau of Home Economics with the collaboration of the National Resources Committee, 1935–36.

Probably no precise limits can be set as to the proportion of normal food expenditure that ought to be represented by commodities on the surplus list. The shorter the list, the greater will be the advantage to producers whose products are included, and the less will be the incentive of consumers to participate. If the list is lengthened, less control is possible over the allocation of benefits to particular producer groups, although the benefits to agriculture as a whole will not be diminished. If the surplus list were to include commodities for which low-income

consumers normally spend as much as half of their food budget, this control would become entirely nonexistent and no purpose would then be served in having two kinds of stamps.

If it is considered essential that the benefits of the blue-stamp subsidy be limited strictly to producers whose commodities are on the surplus list, an alternative arrangement for orange and blue stamps might be suggested. At present, the participant buys \$1 worth of orange stamps and receives 50 cents worth of free blue stamps. Instead, he might be given, say, only 75 cents worth of orange stamps for his dollar and a correspondingly greater amount of blue stamps. More specifically, he might be given only as many cents worth of orange stamps as he would normally spend for the nonsurplus food items. He could then still buy as much food as before, but all of his blue stamps would have to be spent specifically on the commodities listed as surplus.

A numerical example will help to clarify the principle involved here. Suppose the surplus list includes foods on which the participant would normally spend one-third of his food money—in other words that 33 cents of his normal food dollar would go for surplus items and the other 67 cents for foods not on the list. (This is about the average normal ratio of expenditures of low-income families under the current list.) Under the present food plan he is supposed to receive \$1 in orange stamps and 50 cents in blue stamps for each \$1 of normal expenditure. Thus he is required to increase his purchases of surplus foods by only 17 cents per dollar of normal expenditure; the remaining 33 cents of his 50-cent subsidy he is free to spend on any food he chooses. Under the proposal here outlined, he would receive, instead, 67 cents in orange stamps and 83 cents (33 cents plus 50 cents) in blue stamps for \$1. The whole of his 50-cent subsidy would thus have to be spent on increases in his purchases of surplus foods.

Such an arrangement would doubtless be

more difficult to administer than the present one because, to take fullest advantage of it, the proportions of orange and blue stamps would have to be revised whenever extensive changes were made in the composition of the surplus list. Differences in consumption habits, both as between regions and as between individual families within regions, would also have to be taken into account. Some families might be unwilling to participate if required to spend a considerable part of their money to buy surplus commodities that they did not want much, although most of them would probably not react unfavorably if the surplus list were fairly long.

Aside from the administrative problems, the desirability of instituting such a plan depends on how important it is thought to be that the effect of the blue-stamp subsidy be limited strictly to the commodities on the surplus list. From the standpoint of agriculture as a whole this is not essential and may even be undesirable to the extent that it tends to prevent production adjustments between individual commodities to normal consumer demand. It should be understood, however, that if the object is to help only those commodities on the surplus list, the present arrangement regarding orange and blue stamps will not be effective if the list is very long.

RELATION OF SURPLUS LIST TO DIETARY DEFICIENCIES

One of the best features of the stamp plan is that it combines the objective of increased farm income with improved nutritional standards for low-income families. So far as selection of commodities for the surplus list is concerned, these two objectives are probably complementary in the sense that the demand of low-income consumers will tend to be most elastic for those commodities in which their diets are most deficient. Recent studies have shown that their diets are especially deficient in such commodities

as fresh fruits and vegetables, eggs, meats, and dairy products; and, at the same time, these are the types of commodities for which their demand is probably most elastic.

Since the inception of the stamp plan, the administrators have tried to choose the surplus commodities with the consumers as well as farm groups in mind. The dietary needs of consumers should not, of course, be considered to the exclusion of the other factors mentioned earlier. But the greater danger probably lies in the other direction—of yielding to strong pressure from organized groups of

producers who will insist that their products be placed and kept on the surplus list even though, from the consumer's standpoint, it is not desirable to include them.

As a permanent policy, the surplus list ought always to include certain classes of food chosen by competent nutrition experts as those most needed to improve the diets of low-income consumers. The administrators of the stamp plan could then designate the specific items in each food class on the basis of price and the other criteria discussed in the preceding pages.

Costs Under the Food-Stamp Plan

A criticism sometimes made of the Food Stamp Plan is that the distribution of food surpluses through the regular trade channels costs more than distribution by alternative methods, such as direct purchase and distribution by the Surplus Marketing Administration. Obviously there must be some difference in out-of-pocket costs to the Government between a system that uses normal trade channels and permits consumers to buy in their local grocery stores and one that buys at or near farm prices and transports the commodities to the individual State welfare agencies which distribute to consumers through central depots operated primarily with relief labor.

The latter program does not pretend to offer consumers as much in the way of service and convenience as the regular trade channels, so that its costs, even including the value of the relief labor used, are not comparable with those of the stamp plan. Moreover, it was never intended that the direct purchase program would set up a distributive system for providing a full line of food products and consumer-marketing services, nor could this possibly be done without adding greatly to the present costs and facilities of the Surplus Marketing Administration. A comparison of the costs of the two programs as thus far operated can therefore tell little as to the relative Federal expenditures necessary to provide comparable services for handling a full line of surplus products on a national scale.

There is a rather widespread misunderstanding as to how costs are related to the effect of the stamp plan in raising farm income. Because the farmer gets only about

45 percent of the consumer's dollar, some people have assumed that less than half of any Federal subsidy used for the stamp plan will go to the farmer.²⁹ The stamp plan might be fully justified even if this were true, since both farmer and consumer benefit, but the conclusion is incorrect and represents a misunderstanding as to how the plan operates. What the stamp plan does in the case of most commodities is to divert part of the supply from one group of consumers to another, without any increase in the total marketing bill. If the total supply of a commodity to be marketed is fixed and if there is no increase in unit margins, then all of the Federal subsidy goes to the farmer. And if the demand of nonparticipating consumers is inelastic, the benefits to the farmer may even exceed the amount of the Federal subsidy. (See pp. 17 to 19.)

It must also be understood that the comparative cost of the two methods of domestic-surplus disposal is not the only factor that determines their effect on farm income. Regardless of how cheaply or how much of a commodity is bought with the Federal subsidy, its purchase will have no effect on farm income unless it represents a net addition to the food expenditures of low-income families. As previously pointed out, the orange-stamp feature of the stamp plan to maintain normal food expenditures of participants in addition to the blue-stamp subsidy may more than offset any cost disadvantage it may have, so far as farm income is concerned. In other words, the important con-

²⁹ For the commodities on the surplus list from December 16, 1939, to June 10, 1940, the farmer's share of the blue-stamp dollar was somewhat in excess of 50 percent.

sideration is not the cost per item but the total effect on farm income.

A further complicating factor is how to reckon the cost of the relief labor and facilities used in carrying out the direct purchase program. From the standpoint of over-all social efficiency, the objective is to get the food supply from farmer to consumer with the least possible amount of labor and capital, both public and private. If this alone were considered, it would clearly be inefficient from a social standpoint for the Government to set up a separate distributive system to handle food surpluses, thereby duplicating existing private facilities which are already adequate to handle all that is produced. On the other hand, much of the additional relief labor used in the direct-purchase program would have to be maintained at public expense in any case. From this point of view, the only social cost of this relief labor is the alternative use to which it might be put in other public-works projects.

COSTS OF STAMP PLAN DISTRIBUTION

Under the stamp plan, the chief cost to the Federal Treasury of distributing surplus commodities is the value of the blue stamps redeemed. On a commodity-unit basis, therefore, it amounts to the prices paid in the retail grocery store by blue-stamp purchasers. In addition, there are certain costs of administering the stamp plan, although these administrative costs are limited by law to 3 percent of the total cost. No attempt was made in the study here reported to ascertain the administrative costs because the plan has been in operation a comparatively short time and much of the expense incurred thus far has been for setting up the initial organization.

The difference between the commodity costs to the Federal Government under the Food Stamp Plan and under the Direct Purchase and Distribution Program will be equal roughly to the difference between the retail price and the wholesale landed cost in carload lots. In other words, the com-

modity costs of the stamp plan will exceed those of the purchase program by approximately the gross margin of the retailer plus that of the wholesaler. This will vary for individual commodities, depending on the point at which purchase is made by the Surplus Marketing Administration. Where purchases are made direct from growers or at country points, the difference in favor of the direct purchase program may be even greater than indicated above.

Although cost comparisons made in connection with this study indicate that for the commodities thus far on the surplus list the immediate cost to the Federal Treasury is, on an average, about one third less under the direct purchase program than under the stamp plan, it would be incorrect to generalize from this statement without taking off-setting factors into account. These cost findings are approximately in accord with the average combined wholesale and retail mark-ups for these commodities, as found by the Federal Trade Commission in its various margin studies in 1934-35 (table 17).

No great significance, however, can be attached to any average figure, because this figure will vary depending on the particular commodities involved. The margin range for the various items in table 17, for example, was from as low as 15 percent for butter to as high as 45 percent for some of the fresh fruit and vegetable items. With the exception of flour, eggs, and butter, which together have taken a large proportion of the blue stamps, most of the commodities on the surplus list thus far have been of the sort which are expensive to retail and for which the mark-up is comparatively wide.

To sum up, it can be stated as a generalization that the commodity costs to the Federal Treasury under the stamp plan will exceed those of the direct-purchase program by an amount approximately equal to the combined retail and wholesale mark-up. This will vary from 15 to 45 percent of the retail selling price, depending on the commodity involved. For the commodities on

the surplus list thus far, it has cost the Surplus Marketing Administration as much as one-third less, on an average, under direct purchase than under the stamp plan.

TABLE 17.—Combined retail and wholesale margins for specified food products, expressed as a percentage of the retail price ¹

Commodity	Combined wholesale and retail margin as a percentage of retail prices	Commodity	Combined wholesale and retail margin as a percentage of retail prices
	<i>Percent</i>		<i>Percent</i>
Flour ²	17	Oranges ³	35
Packaged rice ²	35	Apples ³	35
Navy beans ²	32	Peaches ³	33
Corn meal ²	35	Potatoes ³	26
Raisins ²	37	Dry onions ³	45
Prunes ²	36	Cabbage ³	45
Butter ³	15	Meats ⁴	36

¹ These data represent the average of gross mark-ups for chains and independents as found by the Federal Trade Commission. The gross margin for the chains is the spread between cost and retail selling price and usually covers wholesale warehouse costs as well as store expenses. For the independents, the margin is the spread between the cost to the wholesaler supplying the retailer and the retail selling price.

² UNITED STATES FEDERAL TRADE COMMISSION. CHAIN STORES, [No. 15] 73d Cong., 1st sess. S. Doc. 62; [No. 16] 73d Cong., 1st. sess., S. Doc. 69; [No. 17] 73d Cong., 2d sess., S. Doc. 81; [No. 23] 73d Cong., 2d sess., S. Doc. 88. 1933.

³ UNITED STATES FEDERAL TRADE COMMISSION. REPORT OF THE FEDERAL TRADE COMMISSION ON AGRICULTURAL INCOME INQUIRY. 3 v. Washington, D. C. 1938. Compiled from pt. I, table 12; pt. II, tables 83, 103, 111, 119, 141, and 167.

⁴ TOBIN, BERNARD F. WHAT BECOMES OF THE CONSUMERS' MEAT DOLLAR? 97 pp. Chicago. 1936. See table 1, p. 16.

It should be reiterated that most of the difference in cost between the two methods is due to the fact that relief labor is used in connection with the direct-distribution program, and this has been left out of account in the above comparison. But even when an

estimated fair value of this relief labor is added to the commodity costs of the direct-distribution program, the total cost is still lower than average retail prices prevailing under the stamp plan. On the other hand, consumers obviously receive more in the way of service when they are able to buy in their neighborhood grocery store than when they must go to central relief depots to receive their food.

Moreover, as pointed out, the relative cost of alternative methods of making purchases of agricultural commodities is only one of the factors to be taken into account in judging the effectiveness of a surplus-removal program. From the farm viewpoint, the effect on income will depend on the amount of Federal funds appropriated for various types of activity. If the Food Stamp Plan is expanded, the main effect will not come directly from the subsidy, which might pay for about 5 percent of the national food consumption, but from preventing extremely low prices on the other 95 percent. As compared with alternative methods, the stamp plan offers more inducement to low-income people to increase their food consumption. In addition, it mobilizes the merchandizing efforts of the food trade for the purpose of pushing sales of surplus food products to all consumers. From the standpoint of the consumer, it has the advantage that it permits wide freedom in the selection of foods and a continuation of normal purchasing habits. All of these and other factors must be taken into account when considering the cost of the approach to surplus disposal.

Effect of the Food Stamp Plan on Retailers, Retail Margins, and Employment

A distinctive feature of the stamp plan as compared with other methods of surplus disposal is that it utilizes existing marketing channels in the distribution of surplus products. This raises the question as to what effect the plan has had on the margins and merchandising policies of retailers and on employment conditions in the food industries.

Several reasons have been expressed for expecting that the plan might have some effects here. In the first place, the volume of food moving through the regular channels will be somewhat larger under the stamp plan than if the Government were to distribute surpluses through separate facilities, as is done under direct distribution by the Surplus Marketing Administration. Then there is the possibility that food handlers might tend to follow somewhat different policies with respect to margins and merchandising practices for surplus commodities sold with blue stamps simply because they know that the Government and the farmers are anxious to move these commodities into consumption as rapidly as possible. Such data and field observations as are available with respect to these questions are given in this section.

DISTRIBUTION OF THE STAMP BUSINESS AMONG RETAIL FIRMS

It has been shown that blue-stamp sales of surplus commodities have amounted, on an average, to about 4 percent of total food sales in the stamp cities. Even if these blue-stamp purchases represented a net increase in food sales, it is evident that their volume is not large in relation to the total food business and hence would not be expected greatly to

influence total marketing costs and employment in the regular channels.

CONCENTRATION OF THE STAMP BUSINESS AS BETWEEN STORES

The blue-stamp business is not evenly distributed among individual retail and wholesale firms. Because of the location of their stores or the nature of their business, some firms have had a much larger percentage of the stamp sales than others. An idea of the way in which the blue-stamp business has been distributed among individual retailers may be obtained from table 18.

Most of the blue-stamp business is concentrated in the hands of a relatively small proportion of the retail stores, according to indications found in this table. In the experimental cities, 3 to 10 percent of the stores are receiving approximately one-third of the blue stamps. In most of the cities, more than half the retailers have a stamp business amounting to less than \$40 per month, and a few of them receive no blue stamps. In stores where this is the case, the stamp plan obviously cannot be expected to have any appreciable effect on margins, merchandising policies, or employment.

For some stores, however, the stamp business has assumed significant proportions. Table 18 indicates that on the average blue-stamp sales amounted to more than \$200 per month in some 10 percent of the stores, and in a few they ran as high as \$1,000. For some of these stores the volume of blue-stamp sales may have been enough to have some influence on retail costs, but the proportion of such stores to the total is not large.

TABLE 18.—*Frequency distribution of retail stores in stamp cities, classified by dollar value of blue stamps redeemed per month, showing cumulative percentages*

Classification of stores (dollar volume of blue- stamp sales per month)	Birmingham ¹		Dayton ²		Des Moines ¹		Rochester ³		Seattle ³		Shawnee ¹	
	Cumulative per- centage of—		Cumulative per- centage of—		Cumulative per- centage of—		Cumulative per- centage of—		Cumulative per- centage of—		Cumulative per- centage of—	
	Stores	Stamps	Stores	Stamps	Stores	Stamps	Stores	Stamps	Stores	Stamps	Stores	Stamps
More than—	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
0.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
20.....	83.3	98.5	52.7	93.5	73.8	97.2	49.7	91.4	40.3	88.4	65.2	96.6
40.....	68.3	94.4	38.8	87.3	50.5	89.7	30.4	83.3	23.6	75.1	49.2	91.9
60.....	55.4	88.5	29.9	80.7	37.6	82.8	27.1	77.4	15.7	64.7	37.7	86.3
80.....	45.1	82.0	23.1	73.7	29.6	76.8	22.2	71.4	12.5	58.9	29.5	80.7
100.....	36.6	75.1	19.6	69.1	24.1	71.5	18.8	66.3	10.1	53.3	23.7	75.7
120.....	30.0	68.4	15.8	62.9	20.3	69.0	15.8	60.5	7.4	45.5	19.6	71.3
140.....	27.5	65.4	13.7	58.8	17.1	64.6	13.5	55.3	5.1	37.9	15.9	66.6
160.....	22.9	59.2	10.8	54.0	14.1	59.8	11.6	50.4	4.2	34.1	15.5	66.0
180.....	20.4	55.4	9.3	50.3	11.8	55.6	9.4	44.2	3.3	29.8	13.0	61.9
200.....	17.7	50.7	8.4	47.5	10.9	53.9	8.5	41.2	2.8	27.4	11.8	59.6
220.....	14.0	43.8	6.9	42.9	9.2	50.1	6.9	35.6	1.9	22.2	8.5	52.6
240.....	11.5	38.5	6.1	40.1	8.1	47.5	5.3	29.5	1.4	19.4	6.8	48.4
260.....	10.0	34.0	5.7	38.9	7.9	46.9	4.5	26.2	1.1	17.3	6.0	46.0
280.....	8.4	31.1	5.5	38.2	7.7	46.3	3.8	23.0	1.0	16.2	4.8	41.9
300.....	7.0	27.4	4.7	34.6	6.9	43.7	2.9	18.7	.9	15.0	4.8	41.9
400.....	3.3	15.8	2.9	25.2	4.6	35.0	1.0	6.8	.4	10.6	3.6	36.6
500.....	1.4	8.1	1.7	17.5	3.5	29.9	.3	4.9	.4	10.6	2.4	30.4
600.....	.5	3.4	1.0	12.2	2.9	26.2	.2	3.3	.4	10.6	1.6	25.6
700.....	.3	2.4	1.0	12.2	2.3	21.8	.1	1.4	.3	7.9	.8	20.2
800.....	.2	1.4	.5	6.7	1.7	16.7	.1	1.4	.3	7.9	.8	20.2
900.....	.2	1.4	.3	4.6	1.3	12.9	.1	1.4	.3	7.9	.8	20.2

¹ For month of October 1939.

² For month of August 1939.

³ For month of July 1939.

PROPORTION OF STAMP BUSINESS DONE BY CHAINS AND INDEPENDENTS

The proportion of the total blue-stamp business going to chain and independent stores in 13 stamp cities is shown in table 19. The percentage of stamp business going to the chains has varied from about 20 percent in Des Moines to 58 percent in Bethlehem.

On the basis of the figures shown, it would appear that the chains are not getting so large a percentage of the stamp business as might be expected from their proportion of total food sales. In Rochester, for example, the latest available census figures show the chains to be doing 41 percent of the total grocery business but receiving only about 28 percent of the stamp business. For the 13 cities listed in table 19, the independent stores were doing 56 percent of the food business in 1929 and were receiving 62.5 percent of the blue-stamp business.

Several conditions may explain the fact that independents appear to have received a relatively larger share of the stamp business than their share of total food business would indicate. The only data available with respect to the percentage of the total grocery business done in these cities by the chains are from the 1929 Census of Distribution. Their proportion of the business done since that time may have changed, although it is not likely to have decreased.

In general, the chains apparently have made as much effort as the independents (and in some cases more) to get blue-stamp business. That they have not had a proportional share of the business appears to be primarily because they do not have many stores in the extreme low-income neighborhoods where relief people do their trading. Certainly this was true in Rochester, where a tabulation of blue-stamp redemptions, by census tracts, indicated that most of the

blue stamps were spent in localities in which the chains had comparatively few stores.

TABLE 19.—*Percentages of blue stamps redeemed by chain and independent retailers compared with percentages of total food business done by each type*

City	Independents		Chain-store systems	
	Percent- age of total blue stamps redeemed	Percent- age of total food sales ¹	Percent- age of total blue stamps redeemed	Percent- age of total food sales ¹
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Rochester.....	72.4	58.6	27.6	41.4
Dayton.....	52.8	49.9	47.2	50.1
Birmingham.....	64.1	40.4	35.9	59.6
Seattle.....	65.2	71.8	34.8	28.2
Shawnee.....	76.3		23.7	
Des Moines.....	79.5	69.6	20.5	30.4
Salt Lake City.....	62.0	71.9	38.0	28.1
San Francisco.....	66.1	65.0	33.9	35.0
Allentown.....	48.9	43.2	51.1	57.8
Bethlehem.....	42.2	35.7	57.8	64.3
Memphis.....	55.4	51.3	44.6	48.7
Akron.....	48.8	57.4	51.2	42.6
Louisville ²	68.6	57.6	31.4	40.8
Average.....	62.5	56.0	38.5	44.0

¹ Data are from the 1929 Census of Distribution. Total food sales are the sum of sales of grocery and combination stores and fruit stores and vegetable markets. San Francisco data are from the 1935 Census of Distribution.

² Includes 1.2 percent classified as "other."

³ Sales data include only 98.4 percent of total sales because the Census Bureau could not disclose sales of one store.

EFFECT OF STAMP PLAN ON RETAIL MARGINS

In attempting to evaluate the effect of the plan on margins and merchandising policies, two steps have been taken. First, from a sample of retailers whose records could provide the data, margins for certain surplus commodities were obtained for a period before and during the operation of the plan. Most of these data regarding margins were necessarily from chain-store systems because few independent grocers keep records from which margins could be computed for earlier periods. In addition, the field men in several of the stamp cities, when interviewing retailers and wholesalers, asked them what effect the plan had had on their margin and

merchandising policies. The writers are inclined to attach more significance to the verbal statements of food handlers regarding these matters than to any quantitative measurements that could be made.

There is not much reason to think that the added volume of business provided by the stamp plan, as operated thus far, would have very much effect on general marketing costs and margins. Any increase in total sales resulting from the plan should have the effect of tending to reduce marketing costs slightly; but so long as these increases are small, they are not likely to be reflected in any significant changes in over-all margins.

That no significant changes in retail margins have accompanied the inauguration of the stamp plan in the experimental cities is indicated by table 20, which shows the margins on surplus commodities taken by several chain systems and by some independents in four stamp cities for a period before and during the operation of the plan. The preplan comparison included corresponding months of the previous year as well as the weeks just preceding the beginning of the plan.

Careful examination of table 20 discloses that in general no change in margins took place when the stamp plan was begun and that the level of margins during the operation of the plan was not significantly different from that of the previous year. In the case of a few commodities, notably long-margin items of which large quantities are not commonly sold, there does appear to have been some reduction in margins by several retailers when these were added to the surplus list. But judging by the experience under the stamp plan thus far, its effect on retail margins in general has been negligible.

This general conclusion was borne out by the reports of field men after interviewing numerous retailers and wholesalers in the stamp cities.

TABLE 20.—Changes in the retail margins of certain firms for surplus foods before and during the operation of the Food Stamp Plan in four experimental cities, 1938-39¹

City, year, month, and week	Butter		Eggs		Dry beans		White flour		Corn meal		Dried prunes		Graham flour		Rice		Cabbage		Tomatoes		Green peas		Onions		Peaches		Pears	
	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D	Firms A and B	Firms C and D
Rochester:																												
1938:																												
May	Pct. -0.4	Pct. -0.2	Pct. -1.5	Pct. +0.6	Pct. +1.8	Pct. 0.0	Pct. -1.9	Pct. 0.0	Pct. -0.8	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. +3.2	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. +5.3	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. +9.0	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. 0.0	Pct. 0.0
June	+2.1	-2	+3.3	+5	-3.2	0	+4	+5	+1.4	0	0	0	-8	0	-5.0	0	+6.0	0	0	0	+18.6	0	0	0	0	0	0	0
July	-1.9	-2	+2	-2.0	-1.3	0	+4.6	-9	-3.0	0	0	0	-1.2	0	+3.9	0	+1.2	0	0	0	-10.9	0	0	0	0	0	0	0
Aug.	+5	-2	-2.7	+2.7	+4.0	0	-3	0	-8	0	0	0	0	0	-4.7	0	-30.1	0	0	0	-6.5	0	0	0	0	0	0	0
Sept.	+1.4	+6	+4	-1.4	+6.0	0	-3.3	+1.9	0	0	0	0	+9.6	0	+1.4	0	+20.0	+10.0	0	0	+9.3	0	0	0	0	0	0	0
Oct.	-1.6	-6	+1.6	-7	-2	0	-1.7	-7	0	0	+7	0	-8	0	0	0	-17.7	0	0	0	-11.4	0	0	0	0	0	0	0
1939:																												
May 6	-1.0		-3.8		0		-1.0		0		0				0		+1.9											
May 13	-1.9		0		+2.1		0		0		0				0		-3.4											
May 20	2.0	2.0	+1.1	+7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0	0	0	0	0	0	+9.0	0	0	0	0	0	0	0
May 27	0		0		0		0		0		0				0		0											
June 3	+7		0		0		0		0		0				0		0											
June	+1.0	-1.6	+1.5	+6	-3.6	0	+1.8	-7	-3.5	0	-2	0	-16.8	0	-1.7	0	+10.2	0	0	0	+18.7	0	0	0	0	0	0	0
July	-7	+2.3	+5.4	-3.1	+3.6	0	+1.0	-7	-2	0	-1.5	0	0	0	2.0	2.0	+17.3	2.0	0	0	+4.9	2.0	0	0	0	0	0	0
Aug.	+1	-3	-1.8	+4	-5	0	-1	+9	-1.5	0	-1.4	0	+3.2	0	+3.7	0	-51.5	0	0	0	-29.0	0	0	0	0	0	0	0
Sept.	-1.6	-4.8	+1.7	-1.5	-15.3	0	-2.4	+1.2	-4.3	0	-9	0	-10.6	0	-1.5	-6.0	+25.1	0	0	0	+24.9	0	0	0	0	0	0	0
Dayton:																												
1938:																												
June	-4.5						-0.1		+18.8						0.0		-8.3		+23.5		+2.5		+23.1				+33.3	
July	+7.5						+10.8		-17.6						+8.2		-7.6		+15.8		-3.0		+10.2				-30.2	
Aug.	-6						-10.8		+15.0						-5.7		-9.1		+64.3		+10.5		-33.3		+8.4		+9.4	
Sept.	-6.2						+8.4		-4.5						-2.5		+11.0		-13.4		+6.8		+26.0		-15.2		+16.7	
1939:																												
June	2	-1.0	2	+1.9	2	0.0	2	0	2	0	2	0.0			0		0		+6.3		+13.7		0				+17.1	
July	+1.0		+1.1		0		0		0		0				2	0	2		2	0	2		2		(2)		2	-1.3
Aug.	+1		+7		0		0		0		0				0		+8.6		+8.0		+7.9		+23.5		+5.3		+5.0	
Sept.	+6		-4.0		0		0		0		0				0		+11.3		-2.6		-2.7		-23.5		+1.4		0	

1938:

1938:

Aug.	+0.8	+0.8	.0	+6.6	-0.6	-5.3	+1.6	.0	+4.3	-6.6		.0	+11.7
Sept.	-1.0	+2.2	.0	+8.7	+7.9	-2.0	+5.7	.0	+4.8	-2.6		-11.7	-6.5
Oct.	+2.2	+7	.0	+5.3	+1.2	.0	+2.0	.0	+5	-1.8		+8.6	
Nov.	-2.2	-1.7	.0	-4.4	+7.8	.0	.0	.0	-7.8	+6.1		+3.1	
1939:													
Aug. 5.	+1.5	-1.2	.0	+4.4	+4.3	.0	+4.0	-5	-9	-4.9		+21.2	+12.0
Aug. 12.	.0	+4.7	.0	.0	.0	.0	.0	.0	.0	-10.0		.0	.0
Aug. 19.	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0	.0
Aug. 26.	.0	-4.7	.0	-2.1	.0	.0	.0	.0	.0	.0		.0	.0
Sept. 2.	.0	.0	.0	.0	.0	.0	-3.3	.0	.0	+15.0		.0	-1.3
Sept. 9.	+7.7	+4.4	.0	+4.9	+1.8	.0	+4.5	.0	-6.7	-15.0		-4.7	-1.3

Des Moines:

1938:

Aug.	-1	-0.3	-0.2	0.0	+3.2	-1.3	+0.6	+1.3	+3.7	-1.5	0.0	+4.1	-2.3	0.0	0.0	+0.2
Sept.	0	+7	+1.1	+6.5	+4.8	-1.9	-5	+3	0	+10.8	-5.2	-8	-2.3			
Oct.	0	0	-7	+18.9	+6.0	-1.6	-5	+2	-7.0	-6.9	+14.7	+8	0			
Nov.	-1	-2.2	-1.2	-18.1	-4.9	+1.0	-2.5	-13.5	-3.6	-2.0	-12.6	-9.6	-2.3			
1939:																
Aug. 5	-1	0	+2		-15.5		-3.6	-3.3		-5.2		-2.2				
Aug. 12	0	+7	-7	-8	0	-1.5	0	0	-10.2	0	0	0	0	-3.1	0	+4
Aug. 19	0	0	+2		0		0	0		0		0				
Aug. 26	2.0	2.0	2.3	(4)	2.0	(4)	2.0	2-3.2	(2)	2.0	(2)	(2)	2.0	(2)	(2)	(2)
Sept. 1	+7.7	-4.4	-1.1		0		-1.3	0		-3.3		-6.9				
Sept.	-2.3	-1	+1.5	+17.9	+11.3	+1.2	-8.7	-1.1	+10.3	-9	-8.6	+40.3	+7.2			
Oct.	-2.2	+2.8	-1.2	-9.3	-7.8	-2.5	+1.9	-9.1	-11.4	-1.7	0					

1 Changes in the retail margin from the previous month or week are expressed as percentages of the retail price, with plus or minus sign indicating the direction of change.

² Period in which stamp plan became operative for this particular commodity.

In Rochester, the field men interviewed some 50 retailers on this point. One man reported:

The feeling was almost unanimous (on the part of the trade) that there was no specific price policy maintained with respect to food stamp commodities or other products. In fact, the people interviewed felt that there was no change at all in price policy over the last year. Some stated that they had run specials on surplus products this year with the hope that they might attract more stamp business, but they would not state that these same products were not on sale at the same time last year. * * *

In Des Moines, one of the field representatives summed up his conclusions regarding the effect of the stamp plan on margins as follows:

It is my observation that there was no change in pricing policy attributable to the stamp plan except in some of those stores which had a large volume of blue stamp business. Those stores doing a large volume of stamp business may be divided into two categories, each of which tended to behave somewhat differently with respect to price policy under the stamp plan—(1) the cash and carry stores, including the chains; and (2) a numerically smaller group of the larger neighborhood credit stores located in low-income shopping areas.

For chain and cash-and-carry stores, the plan does not appear to have had any material effect on the general level of margins, although it may have been a contributing factor in shifting the commodities that are featured weekly. Probably the faster moving blue-stamp commodities, such as butter and eggs, were used as price leaders more often after the plan than before, and some of the slower moving items which were rarely featured before the plan were occasionally used after they were put on the surplus list. But there is no conclusive evidence that the margins in this group of stores for the entire list of surplus commodities had been significantly reduced after the inauguration of the plan.

When the proportion of their cash business had increased sharply after the inauguration of the plan, to attract the stamp trade the low-income neighborhood service stores began to lower margins, particularly on the faster moving surplus items such as butter and eggs. In some instances retail prices were cut as low as or below the wholesale purchasing price. The degree in which this practice prevailed in the individual stores depended on the particulars of the general managerial policy. In general, those stores that charged a dual price policy, credit prices being higher than cash, and that had a greater proportion of credit business and

transient trade were the ones that cut prices most after the plan went into effect. One of the smaller stores in the retail sample instituted a 2-price system by selling surplus commodities at lower prices to the stamp plan participants than to its regular customers.

Not only is it apparent that no very significant change in retail margins for surplus commodities accompanied the stamp plan during its first year of operation in the experimental cities, but there does not seem to be much reason to expect a narrowing of such margins unless definite steps are taken to bring it about.

Should the Department of Agriculture choose to secure a reduction of marketing spreads under the stamp plan, several things might be done. First, it might be pointed out to the trade that any reasonable reduction of margins for surplus commodities would benefit both farmers and consumers and that the Department would welcome whatever cooperation could be given in this matter. There is some precedent for the Department's urging the trade to handle surplus commodities as cheaply as possible, as it has been done for citrus fruit and several other commodities of which there was a surplus during the last few years. Many members of the trade would probably respond to such a request in an emergency situation, although the mere exhortation to reduce margins can hardly be expected to insure their reduction.³⁰

If the Department of Agriculture wishes to go further than this, there is a simple method by which reduced marketing charges may be secured on commodities purchased with blue stamps; that is, blue stamps turned in by retailers may be redeemed at something less than their face value, say 5 or 10 percent less. This possibility was considered before consultation with the food trade prior to the inauguration of the stamp plan program, but it was decided to rely

³⁰ Since this section of the report was written, the Surplus Marketing Administration has instructed the local administrative officials of the stamp plan to urge food handlers voluntarily to keep margins for surplus commodities as low as possible and to make every effort to merchandise them effectively and push their sale.

rather upon competition and suggestion to keep margins at a minimum.

A further extension of the scheme might involve competitive bidding on the part of retailers with respect to the discounts they were willing to allow, the blue-stamp business being given to those firms that offered the largest concessions to the Government. Competitive bidding of this kind, however, would probably be less acceptable to members of the trade than a flat discount applicable to all retailers. With competitive bidding, the firms that got the business would be thought by their competitors to have received a valuable concession from the Department of Agriculture and some criticism from trade groups might ensue.

MERCHANDISING POLICIES FOR SURPLUS COMMODITIES

In addition to the increase in purchasing power provided by the blue stamps and directed toward surplus commodities, it had been hoped that the plan might tend to increase the sale of surplus commodities among all consumers through more vigorous sales-promotion efforts on the part of trade and retail groups.

Perhaps no general statement can be made as to the effectiveness of the merchandising and promotional efforts that retailers have put behind the sale of blue-stamp commodities. With respect to questions of this kind, reliance has had to be placed largely on the judgment and observations of the field staff rather than on any statistics that could be obtained. Moreover, there would naturally be great variation on the part of individual firms with respect to the kind and effectiveness of their merchandising policies for surplus commodities.

When the plan first went into operation in each city, there was almost unanimous co-operation on the part of wholesalers and retailers in trying to explain it to consumers through newspaper advertising and by personal explanation in the stores. Many of the grocers arranged special displays of surplus

commodities and featured these commodities prominently in their advertising. Some had special signs printed and displayed them freely in their stores, listing the surplus commodities and urging consumers to buy them. A few merchants tried putting all the surplus commodities together in one part of the store so as to facilitate their selection and purchase, but this was not altogether successful because many nonrelief customers were loath to be seen buying these commodities lest their acquaintances think them to be relief recipients.

In Dayton the field staff made a study of the merchandising policies followed with respect to surplus commodities. A summary of the report follows:³¹

Advertising and sales promotion under the stamp plan falls into two categories: that which was conducted in the store itself and that done through newspapers and handbills. During the first part of the program there was a good bit of the first type. Practically every cooperating grocer displayed the "grocer's pledge" in his window or in some other prominent place. Many of them had either special handbills or printed lists stating that surplus commodities were stocked in the store * * *. In some cases the prices of the surplus commodities were posted, but this was not the general rule.

There was little or no display of the surplus commodities in a group, as was tried by some stores in Rochester, or with signs identifying them as special commodities. Store advertising in general was confined to the announcement that stamps were redeemed, that the commodities were stocked, and that special prices were to be had on some of them.

* * * The retailers have made little effort to outline the opportunities offered by the stamp plan, even in cases where they know their customers are eligible for participation. * * * In many cases the grocer has not even stressed the uses of surplus commodities in an effort to increase his sales.

When an analysis was made of the advertising conducted through the medium of newspapers, it was discovered that of some 600 retail stores in the city, a comparatively small proportion advertise in the daily papers. * * * In practically all cases during the first few weeks, the larger stores published announcements that they redeemed stamps, stocked the surplus commodities, and sold them at low prices.

³¹ Special Report on Retail Advertising prepared by F. Gordon Straka and submitted on September 26, 1939.

* * * As the plan has gone along, a decrease in the amount of advertising efforts is noticed. The promotion in the stores consists of the same "grocer's pledge," but they have now become rather dog-eared and have slipped to less prominent places. Many of the stores still display the list of surplus foods, but it is typical that the additional commodities have been printed on the margin with pencil. There is little or no effort on the part of clerks to push the specific commodities, and often they are mentioned only if the store happens to be using them as price leaders. In other words, to all intents and purposes they are being treated in the same manner as nonsurplus goods and their merchandising is the same. * * *

Among the factors which tend to account for the failure of retailers to merchandise surplus commodities more vigorously are (1) "that the percentage of total stamp business to total retail business is small. * * * and this small potential increase does not warrant any large expenditure to secure it;" and (2) the novelty of the plan has worn off and in many cases grocers are discovering that they overestimated the amount of increased business the plan would mean to them.

Without doubt many retailers, and especially those who do not get much blue-stamp business, are not putting any special effort into pushing the sale of blue-stamp commodities. Moreover, as the novelty of the plan wears off, there will probably be less and less inclination on the part of many retailers to make special efforts of this sort unless they see a direct gain for themselves in so doing.

That there may, however, be some possibility of securing increased sales through more active trade promotion is indicated from recent experience in Salt Lake City. During the period January 22 to 27, a Surplus Foods Week was held, featuring the commodities on the surplus list. The results were summarized by the field representative as follows:

In our sample of 50 stores (all kinds—a little less than one-tenth of the total) surplus foods sales for the week of January 15 to 20 were taken as the norm, or 100 percent. The next week, during our surplus foods drive, the sales increased by 8.65 percent. Blue-stamp users bought 18.85 percent of the total in the week of January 15 to 20. Their purchases, counted as 100 percent for this week, increased by 9.65 percent during the surplus foods week. Cash buyers bought 8.42 percent more of surplus foods

than in the previous week. These figures are in dollar values, taking the units tabulated at their average retail price. Disregarding the money value, the sale of units for several of these items increased by several hundred percent; but by converting them all into dollars, we still get the substantial increases for the whole set of surplus foods mentioned here.

EFFECT OF STAMP PLAN ON PRIVATE EMPLOYMENT IN FOOD DISTRIBUTION

One of the advantages claimed for the stamp plan is that it does not duplicate existing marketing facilities and so tends to bring about a fuller use of these facilities than if surplus foods were distributed by an agency set up for that purpose. Some proponents of the plan have believed that it might result in greater private employment in food distribution because of the added volume of stamp business.

It should be understood at the outset that the objectives of reduced marketing costs and greater employment as a result of the stamp plan are not exactly consistent with each other. If food surpluses can be handled in the regular channels without additional facilities and personnel, then the per unit marketing costs will tend to be lowered somewhat because the same total marketing bill will be spread over a larger volume of sales. But if the handling of these surpluses requires retailers to employ more people or add to their facilities, then obviously their total costs have been increased and their per unit costs will be lowered little, if any.

To ascertain whether or not the stamp plan has had any effect on employment, the field men in the experimental cities were instructed to interview a number of wholesalers and retailers on this point. A summation of their reports follows.

In Rochester, the field men interviewed about 25 retail and wholesale firms. They reported:

None of the people interviewed experienced any increase in employment because of additional sales under the plan. All expressed the idea that grocery store staffs were capable and flexible enough to meet an increase in business up to 50 percent without

any increase in help. None has had that much increase in business.

Conclusions of the Dayton field staff were substantially the same as those of the Rochester staff.

Every individual interviewed was asked whether there had been an increase or decrease in the personnel of his organization, or in some other unit of which he knew. He has also asked whether he had any opinions as to reasons for this change or lack of it. Every precaution was taken to avoid "putting the answers in the questionee's mouth" * * *.

With few isolated exceptions, consisting mostly of part-time clerks, it was discovered that the Food Stamp Plan has had no effect on employment in the wholesale and retail food outlets in this city. There has been an increase in the volume of total sales of many stores, but it has not been large enough to necessitate a measurable increase in personnel. * * * Reasons why the stamp plan has not led to any increase in employment are: (1) The increase in business per unit has been relatively small; (2) the increase has been in average purchasing power rather than in number of customers; (3) the stamps have proved to be a very efficient medium of exchange; (4) the preplan capacity of the average retail unit has been adequate to handle the increase; and (5) the small retailer is reluctant to increase the number of his clerks.

A representative at Des Moines indicated that his observations did not lead him to think that the stamp plan has had any appreciable effect on employment, except in isolated cases. His statement runs as follows:

Only those large stores that are in the upper 10 percent of stamp receivers in the city have been so

appreciably affected by the plan that additional help has been hired. For the other stores there has been no noticeable effect of the stamp plan on employment because of the flexibility of the employing unit. * * *

The direct effect of the stamp plan on employment in the wholesale food industry was obscured by a number of factors—seasonal employment changes, the Wage and Hour Act, the September war boom, etc. The limiting factors to any upward trend in employment as a result of the stamp plan were that * * * foods sold for blue stamps were but a very minor proportion of total sales for each firm, and that the personnel employed by the firm before the plan could handle a substantial increase in business. * * *

A canvas of retail firms employing a total of 138 persons indicated that 18 of the firms employed no additional help after the stamp plan went into effect, but that three firms did add an additional clerk attributable to the plan.

These comments indicate that the Food Stamp Plan has not affected employment significantly in the areas where it is now operating. The marketing system is quite flexible in the sense that retailers and wholesalers can add considerably to the volume of their business without employing additional help. There may be some exceptions, notably among food processors whose labor supply varies closely with changes in output; but it is doubtful whether any added business attributable to the stamp plan will cause many firms to add to the number of persons already employed.

Effect of Food Stamp Plan Upon Diets of Low-Income Families, Dayton, Ohio, 1939³²

The influence of the Food Stamp Plan upon dietary patterns of low-income families was studied in Dayton, Ohio, in the late summer of 1939 at the request of the Surplus Marketing Administration.

SUMMARY OF STUDY

Since expenditures for food and food purchases are affected by both income and household composition, the plan of the study involved a comparison of the content and nutritive value of diets of groups of families similar in household size and income distribution—groups participating in the stamp plan with those not participating. The basic data were obtained through the cooperation of more than 1,500 randomly selected white families of definite household composition from Surplus Marketing Administration files, W. P. A. pay rolls, and applicants awaiting certification for public assistance.

The most significant difference found between participants and nonparticipants of comparable economic status in the content of diets was the higher consumption of eggs, butter, and fruit by participants. There was also a tendency, however, toward a slightly higher average consumption among participants of most of the items on the surplus list and of most of the major classes of food. There was no indication that the consumption of surplus commodities in the quantities and varieties chosen caused any significant decrease in the consumption of any

major group of foods, although it may have occasioned some shift in the consumption of commodities within food groups.

The average nutritive value of diets of both participants and nonparticipants included in the study tended to meet specifications for satisfactory diets, except among nonparticipating families spending less than \$1.50 per person per week for food. Too much satisfaction, however, should not be derived even from fairly generous average figures. Averages do not reflect the variations within the data. Previous studies based on records of food consumption indicate that a large proportion of families at low or average food-expenditure levels may have diets that fail to provide minimal quantities of nutrients, even though averages would indicate a food supply generous enough to provide a wide margin of safety beyond the average minimal requirements for maintenance. It would be a mistake, therefore, to conclude from the averages presented that the diets of all of the participants and those of the more well-to-do nonparticipants were satisfactory from the standpoint of nutrition.

The nutritive value of diets of participants was significantly higher than that of nonparticipants in vitamin A and in ascorbic acid (vitamin C), and there was a tendency for the diets of participants to be more generous in every nutrient considered. Among participants, the provision for calcium was less generous relative to need than for other nutrients. Among nonparticipants with relatively low food expenditures (\$1.00-\$1.49 per person per week) average values

³² Prepared by Dr. Hazel K. Stiebeling, Sadye Adelson, and others of the staff of the Family Economics Division, Bureau of Home Economics.

were low for calories, protein, calcium, and vitamin A.

The point at which the diets of both participants and nonparticipants were most in need of reinforcement, calcium, was not much affected by participation in the stamp plan. The list of surplus foods authorized for August and September 1939 did not include any food that makes a significant contribution to the calcium content of diets, as would be the case had the list included milk in some form or certain green, leafy vegetables.

During the weeks covered by the study—a period shortly after the inauguration of the program—not all participating families that could afford it were taking full advantage of the stamp plan to maximize their consumption of surplus foods. Average expenditures for food (cash or orange stamps) by all participants included in the study amounted to \$1.66 per person per week. Thus many families were spending more for food than the maximum that could be invested in orange stamps according to the plan (\$6 per person a month or \$1.39 per person a week). The average value of food obtained with blue stamps was only 46 cents, however—much less than the amount (69 cents per person a week) that would follow maximum participation in the plan. However, the foods reported as obtained with blue stamps accounted for more than 90 percent of the participants' purchases of surplus foods and amounted to a little more than one-fifth of the total money value of the entire food supply.

FAMILIES INCLUDED IN STUDY

The study, carried out in August and September 1939, was limited to definite population groups with respect to color and household composition within three categories by type of participation in the stamp plan. Classified by participation, the three groups of families included:

(1) Families with W. P. A. employment that chose to buy for each family member from \$4 to \$6

worth of orange stamps a month (good for any food) in order to receive free blue stamps good for surplus foods—50 cents' worth for each \$1 worth of orange stamps purchased.

(2) Families that received grocery vouchers from the city's Department of Public Assistance and were given \$2 worth of blue stamps a month for each family member.

(3) Low-income families that were not participating in the stamp plan. This third group was composed of families that were eligible for participation but for some reason had not begun to participate, of families that had once been eligible for the program but had become ineligible because of a change in relief status, and of families awaiting certification for relief.

The study was limited to white families and to those that fell into one of the following three broad household-composition classes:

(1) Two-person households, with no persons under 16 years of age.

(2) Three- or four-person households, each with two persons 16 or more years of age and one or two persons under 16 years.

(3) Five-, six-, or seven-person households, each with at least two persons 16 or more years of age and at least one under 16 years.

DATA AND PLAN OF ANALYSIS ⁸³

Field workers, trained to help housewives to recall the facts needed to fill the schedules, interviewed each family and obtained, in accordance with detailed and written instructions, the family's best estimate of its consumption of food during the preceding 7-day period, the persons fed from the family's food supply, and the family income (in money and in kind) for the preceding month.

Altogether, schedules showing income, household composition, and food consumption were filled for 1,582 households. Many families participating in the stamp plan were ineligible for the study owing to the administrative decision to omit those receiving Social Security benefits, as well as those ineligible because of the color and household-composition requirements that had been set up. The proportion of the total number interviewed that were eligible but that

⁸³ This is discussed in greater detail in the appendixes, pp. 96 to 98.

refused to cooperate in filling a schedule was less than 6 percent.

Data on income and household composition regarded as reliable were obtained from 1,561 households—699 participating on the orange- and blue-stamp basis, 526 participating on the grocery-voucher, blue-stamp basis, and 336 nonparticipating households. From these were obtained 1,382 schedules regarded as suitable source material for a study of food consumption and expenditures: 573 from orange- and blue-stamp participants; 503 from grocery-voucher, blue-stamp participants; and 306 from nonparticipants. Thus schedules were rejected because of internal evidence of untrustworthiness from 18 percent of the orange- and blue-stamp participants, 4 percent of the grocery-voucher, blue-stamp participants, and 9 percent of the nonparticipants.

The plan for analysis was determined by the purpose of the study—to compare diets of groups of stamp-plan participants with those of nonparticipants comparable in household composition and income. The comparison was made with respect to: (1) Consumption of the 14 commodities designated as surplus foods³⁴ in August and September 1939; (2) consumption of the 14 major classes of food comprising the diet; and (3) the nutritive value of the diets.

The distribution of families cooperating in the study, by household composition and income, is shown in table 38. Participants with W. P. A. employment were distributed by income much like nonparticipants with W. P. A. employment. Incomes of families receiving relief from the Department of Public Assistance tended to fall below those having W. P. A. employment. The average income (money and nonmoney) of participants with W. P. A. employment amounted to about \$72 a month; of participants receiving relief from the Department of Public Assistance, \$45. The average income of the

nonparticipating group amounted to about \$67 a month. The proportion of the last-named group of families with incomes of \$75 or more a month was as high as among W. P. A. participants, but the proportion with incomes under \$50 was much larger.

There were differences, too, among those cooperating in the study in the proportion of the families that were of each of the three household-composition types. Almost one-fourth of the W. P. A. participants were two-person families; the others were about equally divided between three- or four-person and five-, six-, or seven-person households. Also about one-fourth of the participants receiving relief from the Department of Public Assistance consisted of two-person households; about one-third were three- or four-person households, and almost two-fifths were five-, six-, or seven-person households. The nonparticipants included relatively more two-person families than did either group of participants—almost one-third fell in the two-person class—and they included fewer of the large five-, six-, or seven-person households—less than one-third of their total number as compared with about 40 percent in each of the participating groups.

This study, omitting as it did all Negro families and all white families of eight or more persons, undoubtedly represents families of higher economic status than that portion of the Dayton population that was eligible for stamp-plan participation. This fact should be kept in mind in interpreting the information presented on both income and expenditures for food.

DIETS OF ORANGE- AND BLUE-STAMP PARTICIPANTS (W. P. A. WORKERS) COMPARED WITH THOSE OF NONPARTICIPANTS

Both household composition and income influence customary expenditures for food. Food consumption and dietary levels of orange- and blue-stamp recipients (W. P. A. employees) and those of nonparticipants are compared on the basis of data from 247

³⁴ The list included butter, shell eggs, dry beans, dried prunes, wheat flour, whole wheat (graham) flour, corn meal, rice, cabbage, fresh tomatoes, fresh green peas, onions (except green onions), fresh peaches, and fresh pears.

families in each group that could be approximately matched with respect to household size and income. The total number was limited by the relatively small number of cases in the nonparticipating group as a whole as well as by the infrequency with which W. P. A. participants were found in the lowest income brackets.

Each group of families in the matched comparison was distributed by household composition and income as shown in table 21. The two matched groups, averaging about four persons per household, had incomes averaging just under \$75 a month (table 22). The participants obtained an average of

TABLE 21.—*Distribution by income and household composition of families in each matched sample group (Dayton study)*

Family income per month (in dollars)	Two-person households	Three- or four-person households	Five-, six-, or seven- person households
	Number	Number	Number
25-49.....	17	16	13
50-74.....	29	41	44
75-99.....	11	21	12
100 or over.....	0	16	27
Total.....	57	94	96

\$2.04 worth of food per person per week for cash and stamps; the nonparticipants, \$1.78.

TABLE 22.—*Average household size, income per month per household, and money value of store-purchased food per person per week for households participating with orange and blue stamps and nonparticipating households, comparable in household composition and income distribution, Dayton, Ohio, August–September 1939*

Participation, household composition, and family income per month	Households	Average household size in persons ¹	Average income per month ²			Average money value of food per person per week obtained through commercial channels			
			Total	Money	Other	All food	Food reported as obtained—		Foods on surplus list, for cash or stamps
							For cash or orange stamps	For blue stamps	
All households:	Number	Number	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Participating (orange and blue stamps).....	³ 247	3. 97	74	67	7	2. 04	1. 61	0. 43	0. 47
Nonparticipating.....	³ 247	3. 96	73	69	4	1. 78	1. 78	. 00	. 31
All incomes combined for households of—									
2 persons:									
Participating (orange and blue stamps).....	57	2. 00	61	55	6	2. 79	2. 21	. 58	. 64
Nonparticipating.....	57	1. 98	58	54	4	2. 41	2. 41	. 00	. 46
3 and 4 persons:									
Participating (orange and blue stamps).....	94	3. 35	74	69	5	2. 17	1. 73	. 44	. 49
Nonparticipating.....	94	3. 35	75	71	4	1. 98	1. 98	. 00	. 32
5, 6, and 7 persons:									
Participating (orange and blue stamps).....	96	5. 75	81	72	9	1. 79	1. 39	. 40	. 43
Nonparticipating.....	96	5. 72	81	76	5	1. 54	1. 54	. 00	. 27
All household types combined, with incomes per month of—									
\$25-\$49:									
Participating (orange and blue stamps).....	46	3. 44	43	35	8	1. 96	1. 53	. 43	. 51
Nonparticipating.....	46	3. 49	38	33	5	1. 74	1. 74	. 00	. 31
\$50-\$74:									
Participating (orange and blue stamps).....	114	3. 94	62	57	5	2. 01	1. 57	. 44	. 47
Nonparticipating.....	114	3. 88	62	59	3	1. 65	1. 65	. 00	. 30
\$75-\$99:									
Participating (orange and blue stamps).....	44	3. 73	87	81	6	2. 25	1. 78	. 47	. 49
Nonparticipating.....	44	3. 68	86	80	6	2. 01	2. 01	. 00	. 34
\$100 or over:									
Participating (orange and blue stamps).....	43	4. 85	124	115	9	1. 97	1. 58	. 39	. 41
Nonparticipating.....	43	4. 94	127	123	4	1. 90	1. 90	. 00	. 30

¹ Based on the number of persons fed from the family food supplies during the week of the study.
² Excludes value of blue stamps received.
³ Distribution by income and household composition of the 247 households in each group of the matched comparison is shown in table 21.

The former group obtained 47 cents' worth of foods on the surplus list per person per week, amounting to almost one-fourth of the money value of their entire food supply; the latter only two-thirds as much, 31 cents' worth, amounting to less than one-fifth of their money for food.

Classified by household size, households showed a tendency to decrease per capita expenditures for surplus foods as size increased, but the decrease was relatively less for participants than for nonparticipants. Classified by income, both participating and nonparticipating households showed a tendency as incomes rose to allocate a smaller proportion of their money for food to the items on the surplus list at the time of the study.

Expenditures of participants for all foods on the surplus list were higher than the purchases they reported as made with blue stamps, averaging 47 cents as compared with 43 cents. There may have been a tendency toward omissions in reporting which of the foods on the surplus list purchased were obtained with blue stamps.³⁵

CONSUMPTION OF FOODS LISTED AS SURPLUS

Participation in the stamp plan led to marked increases in the consumption of surplus foods. Forty-three percent of the families participating on the orange- and blue-stamp basis and included in this matched comparison, consumed 50 cents' worth or more of surplus foods per household member during the week of the food study. Only 17 percent of the nonparticipants reported 50 cents' worth or more per member. The

³⁵ In interpreting the figures in table 22, it should be pointed out, however, that household size of families cooperating in the study was measured by number of persons fed during the week of the diet study (total meals divided by 21). This figure for W. P. A. participants tended to differ somewhat from the number of family members for whom orange stamps were purchased, as is shown below:

Household size, in persons	Household size (found in diet study) divided by family size as recorded in S. M. A. records
2.....	0.96
3.....	1.00
4.....	1.04
5.....	1.12
6.....	1.13
7.....	1.19

TABLE 23.—*Proportion of households participating with orange and blue stamps and nonparticipating households, comparable in household composition and income distribution, consuming the 14 foods listed as surplus, and the average weekly consumption of these households, Dayton, Ohio, August–September 1939*

Participation, household composition, and family income per month	Households	Eggs	Butter	Grain products				Vegetables				Fruits			
				White flour	Whole-wheat flour	Corn meal	Rice	Cabbage	Fresh peas	Dry onions	Dry beans	Fresh tomatoes	Fresh peaches	Fresh pears	Dried prunes
All households:															
Participating (orange and blue stamps).....	No. 1 247	Pct. 98	Pct. 96	Pct. 96	Pct. 0	Pct. 26	Pct. 37	Pct. 57	Pct. 20	Pct. 76	Pct. 58	Pct. 91	Pct. 70	Pct. 17	Pct. 15
Nonparticipating.....	1 247	92	82	98	0	20	29	47	4	72	45	89	39	6	6
All incomes combined for households of—															
2 persons:															
Participating (orange and blue stamps).....	57	95	95	93	0	23	32	55	7	66	48	86	68	18	11
Nonparticipating.....	57	93	84	98	0	12	30	39	5	77	33	88	49	12	2
3 and 4 persons:															
Participating (orange and blue stamps).....	94	99	100	96	0	22	35	53	24	72	54	94	69	23	14
Nonparticipating.....	94	94	82	98	0	16	26	48	5	69	40	90	37	4	11
5, 6, and 7 persons:															
Participating (orange and blue stamps).....	96	99	94	99	0	30	42	62	22	86	67	93	71	9	18
Nonparticipating.....	96	91	81	97	0	28	31	51	2	72	55	89	34	3	5

¹ Distribution by income and household composition of the 247 households in each group of the matched comparison is shown in table 21.

TABLE 23.—Proportion of households participating with orange and blue stamps and nonparticipating households, comparable in household composition and income distribution, consuming the 14 foods listed as surplus, and the average weekly consumption of these households, Dayton, Ohio, August–September 1939—Continued

Participation, household composition, and family income per month	Households	Eggs	Butter	Grain products				Vegetables				Fruits			
				White flour	Whole-wheat flour	Corn meal	Rice	Cabbage	Fresh peas	Dry onions	Dry beans	Fresh tomatoes	Fresh peaches	Fresh pears	Dried prunes
All household types combined, with incomes per month of—															
\$25–\$49:															
Participating (orange and blue stamps)-----	No. 46	Pct. 96	Pct. 93	Pct. 91	Pct. 0	Pct. 33	Pct. 31	Pct. 42	Pct. 11	Pct. 64	Pct. 49	Pct. 84	Pct. 60	Pct. 16	Pct. 11
Nonparticipating-----	46	93	85	96	0	26	24	35	2	70	50	83	37	4	7
\$50–\$74:															
Participating (orange and blue stamps)-----	114	99	95	98	0	27	42	61	16	75	64	91	68	14	16
Nonparticipating-----	114	89	76	99	0	19	32	48	4	71	47	86	35	5	7
\$75–\$99:															
Participating (orange and blue stamps)-----	44	98	100	95	0	20	39	61	30	82	55	95	84	30	20
Nonparticipating-----	44	93	89	100	0	18	27	50	7	68	39	98	39	7	7
\$100 or over:															
Participating (orange and blue stamps)-----	43	98	100	98	0	19	28	58	28	86	53	95	70	12	9
Nonparticipating-----	43	98	88	93	0	16	26	53	5	81	37	95	51	7	5
All households:															
Participating (orange and blue stamps)-----	¹ 247	Doz. 2.39	Lb. 1.59	Lb. 3.36	Lb. 0.00	Lb. 0.44	Lb. 0.44	Lb. 2.78	Lb. 0.46	Lb. 1.37	Lb. 1.03	Lb. 5.72	Lb. 4.11	Lb. 0.52	Lb. 0.22
Nonparticipating-----	¹ 247	1.71	1.05	3.10	.00	.62	.29	2.05	.07	1.25	.80	5.37	1.61	.15	.07
All incomes combined for households of—															
2 persons:															
Participating (orange and blue stamps)-----	57	1.54	1.08	2.21	.00	.38	.32	2.47	.14	1.00	.59	3.60	3.24	.62	.16
Nonparticipating-----	57	1.16	.77	1.43	.00	.11	.24	1.11	.08	.97	.39	3.92	2.08	.21	.02
3 and 4 persons:															
Participating (orange and blue stamps)-----	94	1.90	1.44	2.00	.00	.20	.31	2.05	.50	1.08	.65	5.00	3.66	.65	.15
Nonparticipating-----	94	1.44	.89	2.43	.00	.25	.22	2.01	.09	1.11	.59	4.52	1.47	.17	.11
5, 6, and 7 persons:															
Participating (orange and blue stamps)-----	96	3.39	2.06	5.38	.00	.71	.64	3.69	.60	1.87	1.68	7.69	5.05	.32	.31
Nonparticipating-----	96	2.08	1.36	4.75	.00	1.29	.40	2.66	.04	1.56	1.26	7.05	1.46	.09	.06
All household types combined, with incomes per month of—															
\$25–\$49:															
Participating (orange and blue stamps)-----	46	1.99	1.25	3.54	.00	.42	.41	1.58	.23	1.36	1.11	4.58	3.24	.40	.16
Nonparticipating-----	46	1.53	.96	2.92	.00	.67	.20	1.62	.02	1.19	.86	4.72	1.48	.15	.09
\$50–\$74:															
Participating (orange and blue stamps)-----	114	2.56	1.62	3.50	.00	.57	.52	3.39	.33	1.37	1.11	5.65	3.96	.47	.22
Nonparticipating-----	114	1.54	.94	3.21	.00	.64	.34	2.22	.07	1.17	.96	5.38	1.40	.14	.07
\$75–\$99:															
Participating (orange and blue stamps)-----	44	2.07	1.70	3.39	.00	.28	.42	2.64	.84	1.26	1.00	5.17	4.20	.97	.30
Nonparticipating-----	44	1.70	.99	3.04	.00	.55	.31	2.00	.11	1.29	.54	5.72	1.64	.16	.06
\$100 or over:															
Participating (orange and blue stamps)-----	43	2.72	1.79	2.77	.00	.23	.27	2.63	.63	1.49	.80	7.72	5.32	.29	.19
Nonparticipating-----	43	1.86	1.48	3.08	.00	.58	.24	2.13	.07	1.52	.60	5.66	2.26	.16	.05

¹ Distribution by income and household composition of the 247 households in each group of the matched comparison is shown in table 21.

contrasts were even greater when families were classified by household composition. Among two-person households, 68 percent of the participants, and only 44 percent of the nonparticipants reported 50 cents' worth or more of the surplus items for each member; among three- or four-person households, 40 percent of the participants and only 16 percent of the nonparticipants reported as much; among five-, six-, or seven-person households, 31 percent of the participants and only 1 percent of the nonparticipants reported the consumption of 50 cents' worth or more of surplus foods per household member in the week of the study.

A larger proportion of participants than nonparticipants bought each of the items on the surplus list except white flour; the proportion of participants buying butter, cabbage, fresh peas, fresh peaches, fresh pears, and dried prunes was much greater than the proportion of nonparticipants (table 23).

With as many as 14 different articles of food among which to allocate blue-stamp purchases, it is to be expected that there could be larger average differences between the consumption of participating and nonparticipating families with respect to some surplus items than others. Considerably more eggs, butter, fresh green peas, and fruits were consumed by stamp-plan participants than by corresponding nonparticipants, as shown in table 23. Combining all households, the average consumption of the 247 participants exceeded that of the 247 nonparticipants for each of 12 surplus foods. The percentage difference $\left(\frac{P-NP}{NP} \times 100\right)$ for 7 groups of surplus foods is shown below:

<i>Item</i>	<i>Percent</i>
Money value of 14 surplus items.....	52
Consumption of surplus foods or groups of food:	
Eggs.....	40
Butter.....	51
Grain products.....	6
Vegetables, fresh.....	37
Dry beans.....	29
Fruits, fresh (including tomatoes).....	45
Dried prunes.....	214

These differences are statistically significant for the money value of all 14 surplus items combined and for the consumption of eggs and butter. For groups of families classified by household size, average consumption of 10 to 12 of the 14 items was higher for participants than for nonparticipants. For groups of families classified by income, average consumption of participants was practically equal to or higher than that of nonparticipants for all but one item, corn meal.

CONSUMPTION OF MAJOR GROUPS OF FOOD

The average consumption of orange- and blue-stamp participating families equalled or exceeded that of nonparticipants (matched in household size and income distribution) for practically every major food or food group (table 24). For all families in the comparison, the average consumption of the former group exceeded that of the latter by the following percentages $\left(\frac{P-NP}{NP} \times 100\right)$:

<i>Item</i>	<i>Percentage difference in consumption</i>
Eggs.....	40
Milk (or its equivalent).....	8
Butter and other table fats.....	24
Other fats.....	2
Meats, poultry, fish.....	2
Sugars.....	9
Grain products.....	1
Potatoes, sweetpotatoes.....	5
Dry beans and peas.....	21
Tomatoes, citrus fruits.....	14
Leafy, green, and yellow vegetables.....	30
Other vegetables.....	26
Dried fruits.....	145
Other fruits.....	26

Under the circumstances attending the study in Dayton, the chief difference between the consumption of participants and nonparticipants lay in the significantly higher average consumption by participants of butter and eggs with a tendency toward higher consumption of all other food groups, but especially of fruits and vegetables other than potatoes. These results may differ from

those that might be obtained at other seasons of the year, when the relationships between retail prices of various kinds of foods would be different, when other foods would be on the surplus list, and when a larger proportion of eligible families had taken complete advantage of their oppor-

tunities to maximize their purchases of food through participation in the Food Stamp Plan.

In general, relationships between participants and nonparticipants observed for the matched groups as wholes were also observed for corresponding groups when classified by

TABLE 24.—Average consumption of specified food groups per household per week by households participating with orange and blue stamps and nonparticipating households, comparable in household composition and income distribution, Dayton, Ohio, August–September 1939

Participation, household composition, and family income per month	Households	Eggs	Milk ¹	Butter and other table fats	Other fats	Meats, poultry, fish	Sugars	Grain products ²	Potatoes, sweet-potatoes	Dry, mature legumes	Tomatoes, citrus fruit	Leafy, green, yellow vegetables	Other vegetables	Dried fruit	Other fruits
All households:															
Participating (orange and blue stamps).....	No. 247	Doz. 2.39	Qt. 11.40	Lb. 1.66	Lb. 3.16	Lb. 6.60	Lb. 5.26	Lb. 14.82	Lb. 11.66	Lb. 1.53	Lb. 10.25	Lb. 6.82	Lb. 7.37	Lb. 0.27	Lb. 13.20
Nonparticipating.....	247	1.71	10.55	1.34	3.09	6.46	4.83	14.63	11.13	1.26	8.98	5.24	5.86	.11	10.49
All incomes combined, for households of—															
2 persons:															
Participating (orange and blue stamps).....	57	1.54	6.57	1.12	2.36	5.33	3.67	9.26	7.35	.85	6.25	5.10	4.18	.22	11.95
Nonparticipating..	57	1.16	5.59	.94	1.78	4.73	2.80	7.84	6.46	.63	6.65	3.11	3.17	.04	6.32
3 and 4 persons:															
Participating (orange and blue stamps).....	94	1.90	10.96	1.46	2.54	5.88	4.66	11.22	8.74	1.07	8.84	5.47	6.07	.16	10.94
Nonparticipating..	94	1.44	11.11	1.16	2.65	5.98	4.79	11.90	8.81	.97	8.11	5.33	5.94	.14	11.27
5, 6, and 7 persons:															
Participating (orange and blue stamps).....	96	3.39	14.68	2.18	4.26	8.06	6.84	21.66	17.08	2.36	14.01	9.16	10.53	.41	16.15
Nonparticipating..	96	2.08	12.96	1.76	4.29	7.96	6.08	21.34	16.18	1.92	11.20	6.42	7.38	.12	12.21
All household types combined, with incomes per month of—															
\$25-\$49:															
Participating (orange and blue stamps).....	46	1.99	8.71	1.33	2.75	5.90	4.12	12.81	10.48	1.51	7.72	4.29	5.66	.20	10.27
Nonparticipating..	46	1.53	9.07	1.18	2.97	5.33	4.10	13.67	9.53	1.44	7.73	4.28	4.92	.11	9.33
\$50-\$74:															
Participating (orange and blue stamps).....	114	2.56	10.68	1.70	3.34	6.04	5.45	15.58	12.28	1.66	10.73	7.38	7.56	.28	14.34
Nonparticipating..	114	1.54	9.27	1.26	3.16	5.76	4.60	14.72	11.59	1.34	8.38	5.27	5.61	.12	9.00
\$75-\$99:															
Participating (orange and blue stamps).....	44	2.07	11.97	1.70	2.96	7.46	5.48	14.58	9.60	1.57	9.38	7.35	6.66	.32	14.02
Nonparticipating..	44	1.70	12.93	1.28	2.69	7.34	4.78	13.55	9.07	.95	10.85	5.22	6.49	.10	12.30
\$100 or over:															
Participating (orange and blue stamps).....	43	2.72	15.64	1.85	3.36	7.96	5.84	15.21	13.38	1.15	12.56	7.49	9.42	.27	12.43
Nonparticipating..	43	1.86	13.12	1.79	3.42	8.63	6.28	16.52	13.74	1.16	9.97	6.20	6.86	.09	13.83

¹ Fluid milk or its equivalent in solids, not fat, of evaporated milk or cheese.

² Flours, meals, and other cereals; 1½ pounds baked goods counted as 1 pound of flour.

³ Distribution by income and household composition of the 247 households in each group of the matched comparison is shown in table 21.

household composition or by income. Increases in the consumption of surplus foods among participants probably were not accompanied by any significant decrease in the consumption of any major class of foods, although there may have been shifts in the specific commodities selected within food groups.

NUTRITIVE VALUE OF THE DIETS

By reducing the large number of articles of food to the common denominator of chemical composition (food-energy value, protein, minerals, and vitamins), more light may be thrown on differences in diets than from a consideration only of consumption of foods themselves. A large number of chemical substances are recognized as essential to human nutrition. But a nutritional analysis must be confined to those nutrients about which something is known of their distribution in foods and of human requirements. In this study diets were analyzed for their energy value and for their content of protein, calcium, iron, vitamin A, vitamin B₁ (thiamin), and ascorbic acid (vitamin C).

Food energy is needed to maintain body processes and to carry on all of the activities of life. Fats, carbohydrates, and proteins all contribute to the energy value of the diet; but in addition to yielding calories, proteins are essential also to the structure of various tissues, particularly muscle, and to many of the regulatory mechanisms of the body.

Of the several minerals required for normal nutrition, calcium and phosphorus are needed in relatively large quantity. They are the chief constituents of bone and teeth and for this reason it is essential that there be an abundant supply during the period of growth. About 99 percent of the body calcium is in the skeletal structure, but the other 1 percent fulfills an equally important role in the fluids and soft tissues of the body. Phosphorus is an essential constituent of all living cells. It plays an important part in the chemical processes that activate and control body processes. But if calcium is amply provided by a mixed diet there is little danger

of a phosphorus shortage. Iron is essential for the formation of hemoglobin, the oxygen-carrying pigment of the blood, and it performs an important function as activator of certain chemical processes in body tissue.

Vitamins are organic substances necessary in small quantities for growth and for the maintenance of a normal state of nutrition. One by one their chemical nature is being identified, and their specific functions in the body are becoming more clearly understood. Vitamin A is needed for growth and reproduction and for the maintenance of health and vigor at all ages. One of the earliest symptoms of a deficiency of this vitamin is night blindness, or the impaired ability of the eye to adapt to dim light. Prolonged deficiency leads to changes in the structure of epithelial tissue which greatly interfere with its normal functioning, and finally to xerophthalmia, a disease of the eye. Vitamin B₁ plays an essential role in the metabolism of carbohydrate and therefore in the normal processes of all body cells. It is required for growth, for the maintenance of appetite, and for the normal functioning of the gastrointestinal tract. A severe shortage of vitamin B₁ results in the disease called beriberi. Ascorbic acid, vitamin C, first known as a substance necessary for the prevention or cure of scurvy, is concerned with the maintenance of the normal physical state of intercellular substances. In this capacity ascorbic acid is closely related to the development and maintenance of the structure of teeth, bones, and various connective tissues in the body. It is essential to the growth of animals and plants.

The actual quantity of each nutrient needed, together with the proportion of each in the diet, has been and still is the subject of many investigations. Much has been learned about the body's requirement for different nutrients at different stages of growth and development, and how size, sex, and the intensity of muscular activity affect food requirements. But because there are wide variations in the requirements of

individuals and variations in the composition of food materials as eaten (due in part to varying conditions of culture and in part to differing methods of handling and cooking), everyday diets should provide a good margin of safety over the minimum. How wide this margin might well be for each nutrient depends upon how well the body can deal with surpluses and on whether it can store reserves advantageously.

Dietary allowances for food energy generally are kept fairly close to actual requirement, because the body stores a surplus as fat, and an excess of fat soon becomes burdensome. In its normal functioning, however, the healthy body can easily care for such excesses of proteins, calcium, or iron as are likely to occur in customary diets—through either elimination or storage. So far as vitamins are concerned, from two to four times the quantities necessary to prevent obvious impairment may well be consumed. In the quantities likely to be consumed there is no danger of excess; surpluses over immediate needs are readily eliminated for some, and surpluses of others can be stored in the body for use in times of deprivation or stress.

Another and important reason for planning diets that afford a margin of safety over so-called minimal requirements is that the quantities of many nutrients that will maintain "average" health are below those that would enable man to attain his highest potentialities. For many years scientists have been exploring the zone between minimal and optimal food allowances. They conclude from laboratory experiments, and this is confirmed in broad human experience, that improvement in well-being follows the enrichment in some respects of diets customarily consumed in this country. Certain foods, notably milk and green leafy vegetables, are sometimes called protective foods because they can make significant contributions to this desirable enrichment, especially with respect to calcium, vitamin A, riboflavin, and high-quality protein. Other

foods more recently included in the protective list are those important for the vitamins of the B group, especially the unrefined cereal products; those important for ascorbic acid, the vitamin C-rich fruits and vegetables; and among certain groups of the population, the lean cuts of meats, rich in nicotinic acid, and in proteins of high biological value.

The nutritive value of the diets reported in this study was estimated in the usual way, by applying average figures on composition to the data on consumption. Information on food composition was assembled from many sources, including published compilations as well as original reports of laboratory investigations appearing in recent scientific journals. Such figures usually refer to the nutritive value of the edible portion of fresh uncooked foods. In applying these to the quantities of food estimated as used during the week, allowance was made for the average percentage of refuse, such as egg shells, potato parings, and pea pods, but no deductions were made for kitchen or plate waste, both of which may have been considerable in many households. There are likely to be still further losses in nutritive value, particularly of vitamins and minerals, through prolonged storage of foods, discarding of cooking water, and destruction by heat or oxidation in food preparation. As such losses could not readily be estimated, the figures that follow, of the nutritive value of diets, tend to be somewhat high.

The nutrients furnished per capita per day by the diets of the orange- and blue-stamp participants and by diets of nonparticipants comparable in family size and income distribution are shown in table 25. The quantities may be compared with allowances that it is desirable to provide in low-cost diets—allowances that provide for a generous though not extravagant margin of safety. These amount to 2,400 to 2,600 calories per capita per day if women are considered as doing light work (housework for small families) and men doing moderately active work. As much as 2,800 to 3,000 calories should be

allowed if many of the adults are doing heavy work. Equally generous allowances on a per capita basis for the several nutrients would be about 75 grams of protein, $\frac{3}{4}$ to 1 gram of calcium, 12 to 14 milligrams of iron, 5,000 to 6,000 International Units of vitamin A, 1,200 to 1,600 micrograms of vitamin B₁, and 60 to 75 milligrams of ascorbic acid. These quantities certainly are not minimal,

nor are they proposed as optimal. They do afford, it is believed, a desirable level toward which even families with limited incomes should direct their dietary planning.

Compared with these specifications, it is clear that the average nutritive value of diets of both participants and nonparticipants included in this comparison appear to be fairly satisfactory. Among the larger

TABLE 25.—Average nutritive value of the diets per person per day of households participating with orange and blue stamps and of nonparticipating households, comparable in household composition and income distribution, Dayton, Ohio, August–September 1939

Participation, household composition, and family income per month	Households	Average household size ¹	Average nutritive value per person per day						
			Food-energy	Protein	Calcium	Iron	Vitamin A	Vitamin B ₁	Ascorbic acid
All households:									
Participating (orange and blue stamps).....	Number ² 204	Persons 3.79	Calories 3,040	Grams 84	Grams 0.81	Milli-grams 15.4	International Units 7,140	Micro-grams 1,770	Milli-grams 101
Nonparticipating.....	204	3.75	2,560	77	.75	13.8	5,420	1,600	87
All incomes combined for households of—									
2 persons:									
Participating (orange and blue stamps).....	57	2.00	3,860	110	.98	19.2	10,180	2,270	131
Nonparticipating.....	57	1.98	3,220	91	.83	16.0	7,540	2,050	113
3 and 4 persons:									
Participating (orange and blue stamps).....	78	3.36	2,950	81	.87	14.5	7,050	1,740	98
Nonparticipating.....	78	3.36	2,830	79	.83	14.0	5,630	1,640	90
5, 6, and 7 persons:									
Participating (orange and blue stamps).....	69	5.74	2,860	79	.72	14.9	6,320	1,650	95
Nonparticipating.....	69	5.66	2,190	72	.68	13.0	4,660	1,450	78
All household types combined, with incomes per month of—									
\$25–\$49:									
Participating (orange and blue stamps).....	46	3.44	2,860	79	.72	14.5	6,510	1,670	85
Nonparticipating.....	46	3.49	1,760	78	.75	14.0	5,150	1,640	80
\$50–\$74:									
Participating (orange and blue stamps).....	114	3.94	3,060	84	.81	15.6	7,090	1,770	107
Nonparticipating.....	114	3.88	2,730	75	.70	13.5	5,090	1,580	84
\$75–\$99:									
Participating (orange and blue stamps).....	44	3.73	3,150	89	.90	15.6	7,880	1,885	100
Nonparticipating.....	44	3.68	2,890	84	.89	14.3	6,580	1,640	103

¹ Based on number of persons fed from the family food supplies during the week of the study.

² The 204 households in each group of the matched comparison were distributed (or weighted), as follows:

Family income per month	Total number of households	Number of households of—		
		2 persons	3 or 4 persons	5, 6, or 7 persons
\$25–\$49.....	46	17	16	13
\$50–\$74.....	114	29	41	44
\$75–\$99.....	44	11	21	12
Total.....	204	57	78	69

families and those of lowest incomes provision for calcium tends to be low for both groups; in the case of nonparticipants, also the provision for calories and vitamin A. These averages, however, do not reflect the variation within the data. Previous studies based on actual food records indicate that a large proportion of families spending similar amounts for food may have diets that fail to provide minimal quantities even when average figures would suggest food enough, if distributed according to need, to afford a generous margin of safety beyond the average minimum for maintenance.

As a rule, the nutritive value of diets of orange- and blue-stamp participants averaged higher than that of nonparticipants with respect to each factor considered. The percentage difference between averages for 204 participants and 204 nonparticipants, matched in household size and income distribution $\left(\frac{P-NP}{NP} \times 100\right)$, is shown below:

	Percent
Food energy-----	19
Protein-----	9
Calcium-----	8
Iron-----	12
Vitamin A-----	32
Vitamin B ₁ -----	11
Ascorbic acid-----	16

Thus the chief qualitative difference appeared to be with respect to vitamin A. This improvement in the diets of participants is due to higher average consumption of butter and eggs, both important sources of vitamin A. Diets of both participants and nonparticipants improved as incomes rose and, within income classes, became less satisfactory with increasing family size.

The point at which the diets of all families cooperating in this study appeared to be in greatest need of improvement, that is, in calcium, was not much affected by participation in the stamp plan. None of the foods on the surplus list at the time of the study were important contributors of calcium. The foods that can make outstanding contributions with respect to this nutrient are

milk, cheese, and some of the green, leafy vegetables.

Next to calcium, the diets of nonparticipating families included in this matched comparison were perhaps most in need of improvement with respect to vitamin A. The diets of orange- and blue-stamp participants were definitely higher in this respect than those of nonparticipants because of the significantly higher consumption of butter and eggs made possible by the stamp plan.

DIETS OF GENERAL-RELIEF (GROCERY-VOUCHER, BLUE-STAMP) PARTICIPANTS COMPARED WITH DIETS OF NONPARTICIPANTS

The influence of the Food Stamp Plan on consumption cannot be measured by comparing diets of participating families receiving general relief directly with those of nonparticipating families comparable in household composition and income, except when public assistance is on a cash basis. Expenditures for food that are regulated by food vouchers and milk orders may represent a higher or lower proportion of income than would be allocated by families to food if they had free choice in distributing household funds. For this reason, the effect of the stamp plan on diets of clients receiving grocery vouchers and blue stamps has been studied by comparing their diets with those of nonparticipants spending similar amounts for the food of each person (in the case of participants the money value of the grocery voucher was included in this figure but not the value of blue stamps received). This comparison was made for families at two food-spending levels, \$1.00-\$1.49 and \$1.50-\$1.99 per person per week for food. The average money expenditures for food at the two spending levels were approximately \$1.25 and \$1.70 per person per week, respectively, both for participants and nonparticipants.

The blue-stamp purchases of participants appeared to add from one-third (at the \$1.25 spending level) to one-fourth (at the \$1.70

spending level) to usual money expenditures for food of two-person families. These purchases represented a progressively smaller percentage of the total value of food as family size increased at both food expenditure levels (table 26).

The average consumption of foods on the surplus list was much higher among participants than among comparable nonparticipants at both food-expenditure levels, averaging 87 percent more in money value for participants in the food-expenditure class \$1.00–\$1.49 per person per week and 70 percent more for participants in the class \$1.50–\$1.99.

As in the case of orange- and blue-stamp participants, the average consumption of surplus foods by direct-relief participants exceeded that of comparable nonparticipants in most items, but especially with respect to eggs, butter, and fruit. The higher average

consumption of these items by participants contributed directly to the higher consumption of several of the major food groups.

The average nutritive value of the diets of grocery-voucher, blue-stamp participants exceeded that of nonparticipants at both food-spending levels for every nutrient—especially with respect to vitamins A and C. Compared with dietary standards diets of participants were relatively low in calcium at the lower of the two food-spending levels presented; diets of nonparticipants tended to be low in calories, protein, calcium, and vitamin A at both food-spending levels. More milk and cheese would have benefited both participants and nonparticipants; diets of the latter group would have been further improved by increases in butter, eggs, and fresh vegetables and fruits—items on the surplus list in the late summer of 1939, the time of the study.

TABLE 26.—*Food consumption of participants (grocery vouchers and blue stamps) compared with that of nonparticipants: Average household size, average income per month per person, average money value of food per person per week, average consumption of surplus foods and of major groups of food per person per week, and average nutritive value of food per person per day of households spending (apart from blue stamps) in range \$1.00–\$1.49 and \$1.50–\$1.99 per person per week for food, Dayton, Ohio, August–September 1939*

Item	Families spending \$1.00–\$1.49 per person per week for food								Families spending \$1.50–\$1.99 per person per week for food							
	Participants (grocery vouchers and blue stamps)				Nonparticipants				Participants (grocery vouchers and blue stamps)				Nonparticipants			
	All households	Households of—			All households	Households of—			All households	Households of—			All households	Households of—		
		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons
Households included.....number..	197	42	63	92	68	10	26	32	146	47	58	41	79	12	29	38
Household size, ¹ in persons.....do....	4.24	1.99	3.40	5.84	4.29	2.00	3.46	5.67	3.66	2.00	3.41	5.94	4.31	2.06	3.34	5.75
Total income ² per month, per household.....dollars.....	49	32	43	60	66	47	63	74	44	32	45	57	72	37	70	85
Money income per month, per household.....dollars.....	16	6	11	24	62	44	60	70	12	5	12	21	67	32	65	80
Money value of store-purchased food, ³ per person per week:																
Total.....dollars.....	1.65	1.72	1.66	1.63	1.28	1.31	1.30	1.27	2.14	2.29	2.18	2.05	1.72	1.71	1.72	1.72
Money expenditures.....do....	1.25	1.30	1.26	1.24	1.28	1.31	1.30	1.27	1.71	1.75	1.72	1.68	1.72	1.71	1.72	1.72
Blue-stamp purchases ⁴do....	.40	.42	.40	.39	.00	.00	.00	.00	.43	.54	.46	.37	.00	.00	.00	.00
All foods on surplus ⁵ list.....do....	.43	.46	.44	.42	.23	.24	.23	.23	.46	.58	.49	.39	.27	.33	.26	.26

¹ Based on number of persons fed from the family food supplies during the week of the study.

² Excludes value of blue stamps received.

³ Excludes food home-produced or received as gift or pay.

⁴ Based on the money value of the surplus food checked as obtained with blue stamps on the food list.

⁵ Based on the money value of all surplus foods consumed, whether or not checked as obtained with blue stamps on the food list

TABLE 26.—Food consumption of participants (grocery vouchers and blue stamps) compared with that of non-participants: Average household size, average income per month per person, average money value of food per person per week, average consumption of surplus foods and of major groups of food per person per week, and average nutritive value of food per person per day of households spending (apart from blue stamps) in range \$1.00–\$1.49 and \$1.50–\$1.99 per person per week for food, Dayton, Ohio, August–September 1939—Cont'd.

Item	Families spending \$1.00–\$1.49 per person per week for food								Families spending \$1.50–\$1.99 per person per week for food							
	Participants (grocery vouchers and blue stamps)				Nonparticipants				Participants (grocery vouchers and blue stamps)				Nonparticipants			
	All households	Households of—			All households	Households of—			All households	Households of—			All households	Households of—		
		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons		2 persons	3 or 4 persons	5, 6, or 7 persons
Consumption of surplus foods, per person per week:																
Eggs.....dozen.....	.56	.57	.65	.52	.35	.23	.37	.36	.63	.73	.64	.59	.39	.49	.41	.37
Butter.....pounds.....	.37	.39	.34	.37	.19	.20	.17	.20	.42	.56	.44	.36	.24	.29	.20	.24
White flour.....do.....	.90	.76	.78	.98	.65	.40	.58	.71	.87	.97	.71	.95	.60	.38	.58	.63
Whole-wheat flour.....do.....	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.01	.02	.00	.00	.00	.00
Corn meal.....do.....	.16	.17	.13	.18	.15	.00	.02	.23	.18	.09	.13	.25	.08	.00	.10	.08
Rice.....do.....	.11	.16	.09	.11	.06	.08	.04	.06	.13	.20	.08	.14	.06	.11	.05	.07
Cabbage.....do.....	.56	.92	.49	.54	.30	.40	.28	.31	.60	.95	.53	.53	.66	.69	.79	.60
Fresh peas.....do.....	.09	.07	.10	.09	.01	.10	.00	.00	.06	.02	.07	.07	.01	.00	.00	.01
Dry onions.....do.....	.32	.44	.38	.27	.25	.42	.29	.22	.37	.62	.31	.32	.32	.38	.34	.30
Dry beans.....do.....	.26	.27	.24	.26	.23	.32	.20	.24	.29	.18	.27	.28	.19	.22	.20	.18
Fresh tomatoes.....do.....	1.60	1.66	1.91	1.46	1.31	1.85	1.44	1.19	1.62	1.73	1.68	1.53	1.11	1.34	1.04	1.11
Fresh peaches.....do.....	.98	.87	.94	1.01	.27	.10	.19	.33	.98	1.21	1.12	.77	.36	.40	.36	.35
Fresh pears.....do.....	.17	.10	.19	.18	.00	.05	.00	.00	.14	.17	.13	.14	.03	.04	.00	.04
Dried prunes.....do.....	.03	.08	.02	.03	.01	.05	.02	.00	.07	.02	.08	.08	.02	.00	.04	.01
Consumption of major food groups, per person per week:																
Eggs.....dozen.....	.56	.37	.65	.52	.35	.23	.37	.36	.63	.73	.64	.59	.39	.49	.41	.37
Milk or its equivalent ⁶quarts.....	2.41	2.38	2.56	2.42	1.93	1.57	2.20	1.83	3.14	3.26	3.11	3.13	2.55	2.12	3.13	2.35
Butter and other fats.....pounds.....	.39	.45	.37	.39	.27	.25	.30	.26	.46	.60	.46	.40	.32	.46	.29	.32
Other fats.....do.....	.71	.70	.76	.70	.64	.60	.50	.71	.88	.93	.89	.86	.77	.76	.74	.79
Meats, poultry, fish.....do.....	1.34	1.45	1.27	1.34	1.15	1.18	1.02	1.21	1.77	2.01	1.75	1.69	1.66	1.99	1.65	1.62
Sugars.....do.....	1.17	1.20	1.10	1.19	1.07	1.08	1.18	1.01	1.32	1.43	1.41	1.21	1.22	1.32	1.41	1.12
Grain products ⁷do.....	3.58	3.52	3.25	3.71	3.25	2.83	2.68	3.58	4.22	4.23	3.73	4.61	3.29	2.72	3.24	3.37
Potatoes, sweetpotatoes.....do.....	2.82	2.82	2.92	2.78	2.96	2.97	2.36	3.26	2.92	3.40	2.79	2.83	2.80	3.06	2.66	2.83
Dry, mature legumes.....do.....	.36	.33	.37	.39	.33	.42	.24	.36	.44	.49	.42	.45	.33	.34	.34	.33
Tomatoes, citrus fruits.....do.....	2.41	2.33	2.77	2.28	1.76	2.00	2.10	1.56	2.90	2.58	3.08	2.89	1.96	1.54	2.06	1.96
Leafy, green, and yellow vegetables.....pounds.....	1.36	1.74	1.32	1.69	.86	1.00	.81	.87	1.56	1.89	1.46	1.50	1.37	1.46	1.60	1.26
Other vegetables.....do.....	1.46	.93	1.54	1.51	1.23	1.71	1.38	1.11	1.74	1.48	2.03	1.62	1.41	.87	1.75	1.31
Dried fruit.....do.....	.06	.10	.04	.06	.01	.05	.02	.00	.11	.05	.10	.14	.03	.00	.05	.02
Other fruit.....do.....	2.60	2.36	2.72	2.59	1.46	1.79	1.50	1.40	3.36	3.24	3.46	3.32	2.83	1.59	3.55	2.66
Nutritive value of diets per person per day:																
Food-energy value.....calories.....	2,680	2,630	2,620	2,720	2,300	2,180	2,120	2,400	3,220	3,400	3,120	3,240	2,630	2,530	2,720	2,600
Protein.....grams.....	74	71	72	75	63	59	57	66	90	95	86	92	64	59	76	66
Calcium.....do.....	.71	.64	.72	.72	.57	.52	.59	.57	.90	.95	.87	.91	.72	.64	.82	.68
Iron.....do.....	13.7	13.4	13.4	13.9	11.3	11.4	10.3	11.7	16.5	17.4	15.9	16.6	13.0	13.2	13.6	12.8
Vitamin A international units.....	6,400	6,300	6,700	6,400	4,100	4,100	3,900	4,100	7,300	8,000	7,300	6,900	4,700	5,100	5,700	4,300
Vitamin B ₁ (thiamin).....micrograms.....	1,510	1,460	1,460	1,530	1,280	1,260	1,190	1,300	1,840	1,930	1,780	1,860	1,580	1,890	1,570	1,540
Vitamin C (ascorbic acid).....milligrams.....	90	90	95	85	65	70	70	60	105	105	110	100	80	70	90	80

⁶ Fluid milk or its equivalent in solids, not fat, of evaporated milk or cheese.

⁷ Flours, meal, and other cereals; 1½ pounds baked goods counted as 1 pound of flour.

Attitudes Toward the Food Stamp Plan

As the expansion of a given program in a democracy must depend upon the reaction of the people, the attitudes of various segments of the population are particularly important. Though information on the subject may not be most satisfactorily handled by professional economists, the writers have taken the risk of going well outside their field to examine the available information on this subject. Samplings have been made from time to time of general and specific interest groups. These include:

(1) Polls among cross sections of the population as a whole by George Gallup and studies by the Division of Program Surveys, Bureau of Agricultural Economics, of the reactions of city people to the stamp plan.

(2) Reactions of farmers according to studies by the Division of Program Surveys, Bureau of Agricultural Economics.

(3) Examination of editorial comments in 148 newspapers.

(4) Discussions and polls among retailers, wholesalers, and bankers.

(5) Studies among welfare officials and public-assistance cases by the Surplus Marketing Administration and a confidential study in two cities made by Joanna C. Colcord of the Russell Sage Foundation.

REACTIONS OF THE GENERAL PUBLIC AND URBAN AND FARM GROUPS

THE GALLUP POLL

On November 23, 1939, George Gallup, director, American Institute of Public Opinion, announced "overwhelming endorsement of the idea behind this program for distributing surplus foods to families on relief." The questions asked and the reported answers are shown in section A of table 27.

Each enumerator prefaced his first ques-

tion with the following explanation of the plan: "The Government has tried out a Food Stamp Plan which lets people on relief buy certain surplus farm products below their regular selling price. The Government makes up the difference to the merchant." It is evident that this explanation did not correctly describe the stamp program. In view of the reported unpopularity of the "two-price system," the vote is extremely interesting.

TABLE 27.—*Reactions toward the stamp plan in poll of American Institute of Public Opinion*

A			
Questions	Answers—		
	Approving ¹	Disapproving ¹	Without opinion
Do you approve or disapprove of the Food Stamp Plan?.....	Percent 70	Percent 30	Percent 12
Would you approve of extending the Food Stamp Plan to families earning less than \$20 a week as well as to persons on relief?.....	57	43	-----
B			
Population groups	Approving Food Stamp Plan ¹	Disapproving Food Stamp Plan ¹	Without opinion on Food Stamp Plan
	Percent	Percent	Percent
Farmers.....	56	44	15
Urban nonrelief.....	72	28	11
Relief clients.....	88	12	8
Upper-income.....	60	40	13
Middle-income.....	66	34	13
Lower-income.....	79	21	10

¹ Excluding those without opinion.

As a result of a letter written by M. L. Wilson, then Under Secretary of Agriculture, on December 9, more detailed information was secured on the sample. According to

the institute, the national sample used included 3,000 persons, distributed between the different parts of the country "approximately in proportion to the vote of these sections in the last presidential election." The more detailed break-down of the results by population groups is given in section B of table 27.

STUDIES BY THE BUREAU OF AGRICULTURAL ECONOMICS AND THE SURPLUS MARKETING ADMINISTRATION

Two smaller studies to learn the reactions of urban people and farmers were conducted by the Division of Program Surveys of the Bureau of Agricultural Economics. The urban survey was made in Philadelphia during October and December 1939, New York and Providence during November and December 1939, and Rochester during January 1940. The replies to the question "What do you think of the Food Stamp Plan being tried out in Rochester, N. Y.?" are shown in table 28. Excluding those who did not know, this sample included 72 percent who favored it and only 18 percent who opposed, with 10 percent neutral.

TABLE 28.—*Reaction towards the Food Stamp Plan in studies of the Division of Program Surveys, Bureau of Agricultural Economics*

Study and locality	Reactions			
	Approval	Disapproval	Neutrality	Ignorance of plan ¹
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Urban study: ²				
Philadelphia.....	40	14	5	41
New York.....	56	7	4	33
Providence.....	59	11	11	19
Rochester.....	47	19	11	23
Average.....	50	13	7	30
Farm poll ²	38	3	4	55

¹ Includes those who did not know about the stamp plan, as well as some who did not know what they thought of it even though they knew about it.

² 77 persons were asked in Philadelphia, 81 in New York City, 56 in Providence, and 62 in Rochester; 268 farmers were surveyed in the rural study.

A study was conducted among 268 farmers in Michigan, Wisconsin, Minnesota, Nebraska, and Iowa during the period of July through September 1939 (table 28). The figures are interesting because they indicate that (1) at that time, at least, most of the farmers were not familiar with the program and (2) those who did know about it were overwhelmingly in favor of it.

Recently the Surplus Marketing Administration made a number of inquiries about the stamp plan. It used a list of farmers suggested by the County Agent in the farm area surrounding Des Moines. Out of 125 requests for information, 26 replies to numerous questions were received. Of these 26 replies, 23 were in favor of the stamp plan, and 3 were opposed.

REACTIONS OF TRADE GROUPS: WHOLESALE, RETAILERS, AND BANKERS

From time to time during May to October 1939, a total of 50 food merchants in Rochester, Dayton, and Seattle were asked, "Do you favor the Food Stamp Plan now operating in your city?" As might be expected, all the responses were favorable. In Des Moines, 115 grocers were polled by the Distributors' Committee of the Food Stamp Plan. The tabulations of the replies to the question: "Do you approve of the Food Stamp Plan?" classified by type of store are presented in table 29.

Members of the American Institute of Banking have taken considerable interest in the program operations. As indicated previously, under the mechanics of the plan retailers and wholesalers may present stamps received by them to banks for collection from the Treasury. They may also present them to the Surplus Marketing Administration for payment.

In most areas banks have been very cooperative in offering new facilities. In Rochester, however, where about 25 to 40 percent of the stamps received by small merchants were handled by banks during

the early operation of the program, it appeared for a time that the banks would make a collection charge for this service. This did not seem desirable, as it might add to the costs of the small-store operators and possibly impair the ability of these people to compete with larger business units. As a result of unified protest by trade groups in Rochester and further simplification of the procedures for redeeming stamps, the service charge was not imposed. Efforts of the Surplus Marketing Administration to reduce the volume of clearances of stamps through banks appear to have removed any latent criticism.

TABLE 29.—*Reactions of grocers in Des Moines, Iowa, toward the Food Stamp Plan in poll by city Food Stamp Plan Distributors' Committee*

Stores classified by income locality	Reactions			
	Approval of Food Stamp Plan	Disapproval of Food Stamp Plan	No reply	Number of stores polled
	Percent	Percent	Percent	Number
High-income.....	67	-----	33	12
High-medium.....	92	-----	8	37
Low-medium.....	89	3	8	36
Low-income.....	94	-----	6	17
Not classified.....	69	31	-----	13
Total.....	86	4	10	115

REACTIONS OF WELFARE OFFICIALS AND RELIEF CLIENTS

Wide approval of the program is indicated in questionnaires returned by welfare officials and relief clients in Rochester, Dayton, and Seattle. The questions and responses are presented in table 30.

Two detailed studies were conducted among nonparticipants—one in Rochester and the other in Shawnee. In Shawnee, 1,272 letters were sent out on October 24, asking information on reasons for nonparticipation; 676 replies were received, of which 482 came from single persons. Some of the principal reasons given for not participating were the following:

Do not receive enough money to buy stamps and meet other expenses.....	381
Have not participated but hope to do so in November.....	86
Owe old grocery bills which must be paid before can buy stamps.....	36
Do not want to participate.....	19

In Rochester, among 179 cases interviewed in November, 31 indicated they were unable to meet the minimum purchase requirement; 11 indicated they had back bills to pay; 30 said they did not understand the plan; 18 indicated they did not cook; 5 reported they did not use enough surplus commodities to make the plan worth while; and 18 said that the procedure embarrassed them.

TABLE 30.—*Reactions of welfare officials and relief clients in Rochester, Dayton, and Seattle toward the Food Stamp Plan in poll by Surplus Marketing Administration*

Question	Answer by—			
	Relief clients		Welfare officials	
	Yes	No	Yes	No
Do you like the new Food Stamp Plan? ¹	Percent 89	Percent 11	Percent 93	Percent 7
Would you like to see the stamp plan continue? ²	-----	-----	94	6
Do you believe that needy families would be better off under the old distribution method? ³	-----	-----	1	99

¹ The first question was asked of 129 relief clients and 71 welfare officials in the 3 cities.
² 71 welfare officials in the 3 cities answered this question. The inquiry was also made among relief clients in 2 cities and all replied favorably.
³ 70 welfare officials replied.

Joanna C. Colcord, director, Charity Organization Department, Russell Sage Foundation, has been a careful student of the Food Stamp Plan. She made two detailed investigations, one in Dayton and the other in Rochester. Confidential copies of the reports were received.³⁶ The report on Dayton was generally favorable, and similar to those already noted in its observation of the attitude of relief workers, clients, and busi-

³⁶ Miss Colcord has kindly granted permission to use the information in her reports.

ness groups. During the period from July 31 through August 4, Miss Colcord studied the experience in Rochester. Some of her most interesting comments and criticisms were as follows:

EFFECT OF PLAN ON INTAKE OF WELFARE AGENCIES

As elsewhere stated, applications for certification by those not on relief have not exceeded 25 to date. Intake of the DPW has been less in May and June than in corresponding months last year, due to improved private employment.

Applications, Department of Public Welfare

	1938	1939
May-----	739	507
June-----	837	491

Intake during July and August is expected to increase, but on account of W. P. A. lay-offs, not on account of the stamp plan.

ATTITUDES TOWARD PLAN, AND CHANGES PROPOSED OR DISCUSSED

(a) *Attitudes of Clients.*—About a dozen nonselected clients were interviewed at Surplus Marketing Administration headquarters. Without exception, they liked the plan. The effort involved in coming two or three times a month to headquarters to buy stamps was not so great as that involved in going to the commissary to secure commodities. All stressed their ability under the new plan to select the commodities they preferred; and all stated that they were actually able to secure more commodities with their blue stamps than had been issued from the commissary. None had experienced discrimination of any sort in trading at stores. One or two said that they had started in by purchasing the maximum they were allowed; but now bought only the minimum, in order to have a little free cash to buy in the public market or from hucksters. This, however, did not represent the general trend, since average purchases per individual have advanced from \$8.30 in May to a little over \$10.00 in August. The Workers' Alliance at first took an antagonistic attitude toward the plan, as representing a retrogression from cash relief, which they favored. Their president, Mr. Costa, assured me, however, that they were now "100 percent" in favor of it, and that "100 percent" of their members were using it. He knew of no one who, having begun to use it, had dropped out.

Social workers reported universal satisfaction among their clients, with the following minor exceptions:

Elderly people, who had been receiving cash allowances as OAA, and who objected to being obliged to disclose themselves to their grocers as on relief. To a less degree, the same was reported for mothers on ADC.

Sick or handicapped persons who were unable to go themselves for stamps, and had no one whom they could send regularly.

One ex-service man, also an ex-grocer, preferred to forego receiving surplus commodities rather than present stamps to any of his former associates. He was, however, trading out with a meat dealer a debt owed him before he lost his business.

One ADC client, an unmarried mother with one child "just couldn't be bothered" to buy stamps.

A few Italian clients felt that \$1.00 per person per week was too much to spend for food. A few had complained that they had to wait till cash customers were served.

In general, welfare agencies appeared to be under the impression that a larger percentage of their families were purchasing stamps than was actually the case.

(b) *Attitudes of social workers and agencies.*—All agree that the present plan is a great improvement over earlier methods of commodity distribution. Having experienced the change to cash relief, they regret the introduction of features which again identify the relief client as such when he makes purchases, and which to some degree constrains the use he makes of his money. But they have been impressed by the extreme popularity of the plan with the clients, and say "why, after all, should we seek to impose our ideas of what would be better for the clients?"

The social workers of Rochester would, however, like to see some experimentation with a plan which they feel sure the clients would like even better: namely, abandonment for a specified period of the sale of orange stamps, and the distribution of blue stamps to clients along with checks for their full relief budget in cash. They believe that surplus commodities should thus be moved without any serious reduction of amounts of food which clients would purchase with cash—thus taking sharp issue with the grocers.

The attitude of the social agencies can be summed up as reasonable cooperation, no opposition, and watchful waiting.

REACTIONS OF THE PRESS

Analyses were made of 213 editorials appearing in 148 different newspapers from March 1939 through the first week of January 1940. Although availability was the

basis for selection, all States were represented. So far as could be learned, 280 specific points about the operations were stressed in these editorials; 200 of these were favorable, 52 were unfavorable, and 28 were neutral.

The leading editorial views of interest are listed in table 31.

TABLE 31.—*Principal reactions toward Food Stamp Plan expressed in 213 editorials, March 1939–January 1940*

Favorable	Unfavorable	Neutral
Worth trying—seems sound—good expedient—experimental basis is encouraging factor—cotton surplus plan worth trying: 97 editorials.	Subsidy—artificial—temporary and superficial—substitute for real issue, employment—let supply and demand work: 14 editorials.	No opinion expressed: 20 editorials.
Improvement over others (direct distribution, plowing under, 2-price plan): 21 editorials.	Somebody has to pay for it: 9 editorials.	We'll wait and see: 4 editorials.
Glad Government co-operating with business: 8 editorials.	Two-price plan again: 4 editorials.	
Extend it: 6 editorials.		

ATTITUDES TOWARD THE LOW-INCOME PROGRAM

With the inauguration of the low-income program in Shawnee, Okla., the first major criticisms developed. The United States Chamber of Commerce issued a pamphlet on the subject prepared by the Domestic Distribution Department Committee.³⁷

The main conclusions in the pamphlet were as follows:

A recent innovation in the public policy which permits free distribution of commodities to persons having low incomes but who are *not on relief* calls for careful scrutiny. This new policy is in effect a radical and dangerous departure from the government's policy of giving relief, and carries with it precedents and implications that may have far-reaching consequences.

Subsidies at Public Expense.—The new plan involves radical departure from previous public policy

of relief administration. *It has the effect of making gifts at public expense of a part of the cost of necessities too, to groups of persons with low incomes.* In effect, the plan is but a variation of the "Two-price Plan" which was almost universally discredited at the time it was proposed several months ago. *The new plan allows the favored group to purchase greater quantities of merchandise for the same outlay than is required to those who do not receive food-stamps and who must pay full retail prices for their purchases.* The present complete subsidy for those in need would thus be expended into partial subsidy for those with low incomes.

As announced by the Department of Agriculture, persons who are to be aided under the new plan are those with incomes of less than \$19.50 a week. Is this income level to be inflexible, or may the level be raised to \$24.50, or \$29.50, or some other amount? What are the conditions which determine the setting of any standard? After once being certified as eligible to receive benefits, what checks will be established to determine if and when a person's economic status has changed to make him ineligible?

It is apparent that the establishment of a policy resting upon determination of a level of income, regardless of the amount, is fraught with difficulties. Once a government policy has been established to aid low-income groups it is inevitable that pressures will be exerted to broaden the base by successively raising the income level.

Opportunities for Discrimination.—Any criteria established for separating those to be favored by government largess from those who are to be required to stand on their own must be either inflexible in their application to all situations, or otherwise must be flexible enough to allow government administrators to exercise judgment in passing upon individual cases. Both situations lend themselves to discrimination and hardship, while the second is fraught with the added danger that deliberate discrimination may result as a consequence of personal, political, religious, or other bias on the part of the administrators who must pass judgment.

Creates Economic Classes.—An unavoidable consequence of a policy such as that outlined would be to *classify citizens into economic classes.* Such classification of citizens by governmental bureaus is dangerous to democratic principles and should be avoided.

It is difficult to know whether this attitude is widespread. It is obviously not shared by the Shawnee Chamber of Commerce, which has been the principal agency responsible for the development of the program in Shawnee. Moreover, as indicated previously, Dr. Gallup reported that 57 percent of the people polled were in favor of "extending the Food

³⁷ "Free Distribution of Surplus Commodities to Persons Not on Relief," September 1939.

Stamp Plan to families earning less than \$20 a week as well as to persons on relief."

It is interesting that Mark Sullivan criticized the early phases of the Food Stamp Plan on the grounds that low-income people were not included. In May 1939 he wrote as follows:

How will this look to persons who are not W. P. A. workers, or otherwise on relief? How will it look to persons in private employment at wages lower than, or about the same as, the wages received by W. P. A. workers? Why should a W. P. A. worker getting \$14 a week (the nation-wide average) receive \$3.75 worth of food a week free while a worker in private industry receiving the same wage or less, must pay cash for exactly the same food? There are hundreds of thousands of persons in private work who get less than the \$14 a week which is the W. P. A. average—perhaps millions who receive less than the top wage paid to W. P. A. workers, which is

\$90 a month. What is the point of discriminating in favor of the W. P. A. worker, putting a handicap on the private worker?

CONCLUSIONS REGARDING ATTITUDES

On the whole, it appears to be quite clear that there has been an astonishing extent of agreement on the merit of the program. The Food Stamp Plan has evidently attracted as much public attention as any program launched in recent years. Moreover, the weight of opinion, where the plan is understood, appears to be extremely favorable. This attitude does not seem to be confined to any particular group. The program is apparently one phase of direct action that has substantial support from every large group in the community.

National Potentialities of the Food Stamp Plan

What expenditures would be necessary to operate the Food Stamp Plan on a national basis? And if the program were operating nationally, what would be the potential size of the new market and what are the possible effects on farm income? The first of these questions is relatively easy to answer; the other two are not. The answers given here necessarily involve certain assumptions as to the demand elasticities of different income groups, as well as a considerable element of judgment based on study and observation of the plan to date.

COST TO THE FEDERAL GOVERNMENT

At present, 18 to 20 million persons in the United States are eligible for, or are receiving, public assistance. This number includes families of persons on general relief, families eligible to receive but not now receiving such assistance, Social Security cases, and W. P. A. workers. On the basis of the experience to date, about 75 percent of the persons to whom the plan is made available may be expected to participate. If the plan were made available to all persons in the United States who receive public assistance, it would be necessary to provide blue stamps for approximately 15 million people. With blue-stamp expenditures amounting to \$25 to \$30 per person per year, the cost of the program to the Federal Treasury would be from 375 to 450 million dollars per year.

If the plan were also to include employed families with incomes of less than \$1,000 per year in all towns and cities over 2,500 population, an additional expenditure of about 200 to 240 million dollars would be required.

A program for all relief people and all employed low-income families in both rural and urban areas would cost about a billion dollars per year.

EFFECT OF A NATIONAL PROGRAM ON FARM INCOME

Assuming an expenditure of 400 million dollars, what would be the effect on farm income? Any quantitative estimate of this must be rough, and is necessarily based on certain assumptions regarding demand elasticity and extent of substitution of blue stamps for normal expenditures. As indicated before, the demand for food among nonparticipants is likely to be inelastic. In order to get a quantitative measure of the increase in demand, the writers have assumed that the demand elasticity for this group probably lies between unity and one-half.³⁸ It has also been assumed that all of the supplies would be marketed so that the effect of the program would be to increase prices and to increase the proportion of the supply made available to the lowest income groups rather than to increase the total supply. Finally, it has been assumed that about 75 percent of the blue-stamp expenditure is a net increase in demand and 25 percent represents substitution of blue stamps for regular expenditures.

Under these circumstances, for an expenditure of 400 million dollars, the increase in nonparticipants' outlay would lie between a minimum of 300 million dollars and a

³⁸ Unitary elasticity means that expenditures for food remain constant regardless of changes in price. Elasticity of one-half means that a given increase in price will reduce the quantity taken by a proportion equivalent to one-half the price increase; that is, roughly, with an increase in price of 2 percent, the quantity taken will decrease by 1 percent.

maximum of 555 million dollars, depending on the elasticity of demand of nonparticipants (table 32). This estimate is conservative in the sense that there is reason to believe that the degree of substitution is being reduced below 25 percent. If this happens, it will increase the potential effect of the program considerably.

What proportion of this increase in consumer expenditures will go to farmers? If margins increase as consumer expenditures increase it is possible that as little as four-fifths of the increase in consumer expenditures will be received by farmers (see pp. 20-21). In attempting to set forth the minimum effects of the program, it has been

assumed that four-fifths of the increase in consumer expenditure will be returned to farmers. This report suggests possible methods of preventing margin increases on sales for blue-stamp commodities and a direct means of reducing them. If such results are achieved, farmers would receive more than four-fifths of the increase in consumer expenditure. Under these circumstances, farmers should receive appreciably more than the minimum estimates shown in column 2 of table 32. If marketing costs can be held down and if substitutions can be reduced, the writers believe that farm incomes would probably be increased by at least the amount of the subsidy.

TABLE 32.—Possible increases in consumer expenditure and farm income as a result of the Food Stamp Plan under specified assumptions ¹

Assumed elasticity of nonparticipants' demand	Assuming a 400-million-dollar program			Assuming a 125-million-dollar program		
	Increase in consumer food expenditure	Increase in total farm income	Percentage of increase in total farm income from food crops	Increase in consumer food expenditure	Increase in total farm income	Percentage of increase in total farm income from food crops
	Million dollars	Million dollars	Percent	Million dollars	Million dollars	Percent
1	300	240	4.0	90	72	1.2
$\frac{3}{4}$	435	348	5.8	135	108	1.8
$\frac{1}{2}$	555	444	7.4	180	144	2.4

¹ It is assumed in this table that only 75 percent of the blue-stamp expenditure is a net increase in demand; that the farm income is normally about 40 percent of consumer expenditure; that elasticity of nonparticipant demand for food probably lies between unity and one-half. The possible effects on consumer expenditure are, therefore, computed on the basis of the 2 extreme assumptions and an intermediate assumption. It is assumed here that farmers will receive four-fifths of the increased consumer expenditure, which is a minimum estimate. The computations are made from the following formula:

$$R^n - R^{n-1} \left(\frac{t_o + S}{T_o} \right) - \left(1 - \frac{t_o}{T_o} \right) = 0 \quad (1)$$

where T_o = total consumers' food expenditure without plan
 t_o = total participants' food expenditure without plan
 S = effective subsidy (75 percent of actual subsidy)

and $R = T_1/T_o$ = index of increase in consumers' food expenditure under plan. ($R-1$ = percentage increase in consumers' food expenditures.) This formula is derived as follows: The general formula for demand of elasticity n :

$$P^n Q = \text{constant}$$

becomes, when applied to the demand of nonparticipants in the plan

$$P_1^n \left(\frac{T_1 - (t_o + S)}{P_1} \right) = P_o^n \left(\frac{T_o - t_o}{P_o} \right)$$

$$\text{i. e., } \left(\frac{P_1}{P_o} \right)^{n-1} = \frac{1 - \frac{t_o}{T_o}}{R - \frac{t_o + S}{T_o}} \quad (2)$$

where the P 's are indices of food prices with (P_1) and without (P_o) the plan.
But, since total supply is assumed constant,

$$\frac{P_1}{P_o} = \frac{T_1}{T_o} = R \quad (3)$$

Substituting from (3) in (2) we obtain (1), expressing R in terms of given quantities.

EFFECT OF A STAMP PLAN OF MORE LIMITED SIZE

It appears to be unlikely that the stamp plan will involve an expenditure of more than 125 million dollars during the current fiscal year. Consequently, it may be particularly significant to review the potentialities of expenditures of this size. The effects obviously will be appreciably smaller. Under the previous assumptions, the minimum benefits to farmers would be on the order of 72 to 144 million dollars for the expenditure of 125 million dollars (table 32). This would increase total farm income from food crops by 1 to 2 percent. The benefits to most individual commodities on the surplus list should be considerably greater than this, but probably would not be of sufficient size to offset the difficulties presented by unstable national income and restricted foreign-trade outlets.

EFFECT ON DEMAND FOR SPECIFIC COMMODITIES

One way of indicating the potential demand for individual commodities is to project the information on utilization of stamps for individual commodities to a national basis and to relate this to domestic consumption of the specified commodities. Table 33 gives the national purchases under the program based on consumer use of blue stamps with two different surplus lists—the one for July 16–September 30 and the one for October 1–December 15.

Again it is necessary to qualify the conclusions that may be drawn. The number of cities used may be too small to indicate national averages. Some of the consumption data used for comparison are not too accurate and may not be strictly compa-

TABLE 33.—*Estimate of purchases of specified surplus commodities under a national Food Stamp Plan and comparisons with average domestic consumption*

[Surplus lists of July 16–September 30, and October 1–December 15]

Commodity	July 16–Sept. 30				Oct. 1–Dec. 15			
	Percentage of total expenditure for each commodity ¹	Blue-stamp purchases ²	Average domestic consumption ³	Stamp purchases as a percentage of domestic consumption	Percentage of total expenditure for each commodity ¹	Blue-stamp purchases ²	Average domestic consumption ³	Stamp purchases as a percentage of domestic consumption
	Percent	Million	Million	Percent	Percent	Million	Million	Percent
Butter.....pound..	24.0	298	2,191	14	25.5	279	2,191	13
Eggs.....dozen..	23.6	330	2,602	13	25.6	302	2,602	12
Flour (Wheat equiv.)...bushels..	13.3	32	484	7	15.6	35	484	7
Corn meal (Corn equiv.)...do....	2.1	6	49	12	2.3	7	49	14
Rice.....pounds..	2.1	122	709	17				
Dry beans.....do....	4.1	229	931	25	4.0	208	931	22
Dried prunes.....do....	2.1	83	266	31	2.0	80	266	30
Raisins.....do....					2.2	84	301	28
Apples.....do....					7.8	690	6,208	11
Peaches.....do....	10.0	220	1,377	16				
Pears.....do....	2.4	41	753	6	1.4	27	753	4
Cabbage.....do....	3.2	357	2,461	14				
Peas.....do....	2.0	63	407	16				
Tomatoes.....do....	7.7	270	1,623	17				
Onions.....do....	3.4	331	1,965	17	3.0	292	1,965	15
Lard.....do....					10.0	364	1,559	23

¹ Averages for 6 cities; in computing these the percentage distribution of the number of persons receiving public assistance in the States around each city have been used as weights.

² Stamp-plan purchases corrected for seasonal variation on the basis of 12-month season for all commodities except peaches and pears (4-month), peas and apples (10-month), tomatoes (9-month).

³ Estimate supplied by Bureau of Agricultural Economics, Division of Program Coordination and Development; 1934–38 average for fruits and vegetables, 1928–37 average for other commodities; allowance made for farm-to-retail market waste.

table.³⁹ Moreover, this review refers to only two commodity lists, neither of which includes meats. Obviously, many of the individual commodities receive fewer stamps when meats are included. Finally, all of the demand will not be a net increase. There is bound to be considerable substitution for some of the commodities and some substitution on all of them.

For the period from July 16 through September 30, the data indicate that on a national basis the maximum potentialities of the blue-stamp expenditures would have been equal to 13 to 14 percent of the domestic butter-and-egg market, 7 to 17 percent of average consumption of the cereals on the list, 25 percent of the average dry-bean consumption, 31 percent of domestic-prune consumption, and 6 to 17 percent of the domestic consumption of fresh fruits and vegetables on the list. For the October 1–December 15 list, the data show insignificant changes in the potential demand for butter, eggs, dry beans, and prunes. For apples, raisins, and lard (first added in October) a significant potential demand is indicated.

It cannot be concluded that all of this demand would be a net increase. Undoubtedly there would be some substitution for many if not all commodities (that is, the blue stamps would be used in part, at least, for purchases that might otherwise be made for cash). One method of indicating the minimum effect of a national program on the individual commodities would be to compare the percentage of the total market that low-income groups would be expected to account for normally and the percentage indicated from the blue-stamp distribution. This calculation is shown in table 34. Column 1 gives a rough indication of the proportion of the total market that would be accounted for by 15 million people who had consumption habits similar to nonfarm, nonrelief consumers with less than \$500 income in 1935–36. Column

³⁹ For example, domestic consumption of flour and raisins includes supplies used by bakers, whereas the stamp-plan data refer to home consumption.

2 indicates the proportion of the total market which would be accounted for by blue-stamp expenditures on a national basis for two surplus lists. The net effect of the program might be indicated by subtracting column 1 from column 2.

TABLE 34.—*Rough estimate of percentage of domestic supplies "normally" purchased by 15 million low-income persons, and percentage that national Food Stamp Plan would provide*¹

[Based on surplus lists—July 16 through December 15]

Commodity	"Normal" percentage of market	Blue-stamp percentage of market
	1	2
	Percent	Percent
Butter.....	5	13
Eggs.....	6	13
Rice.....	14	17
Dry beans.....	12	23
Dried prunes.....	4	30
Raisins.....	5	28
Apples.....	2	11
Peaches.....	4	16
Pears.....	8	5
Cabbage.....	9	14
Peas.....	6	16
Tomatoes.....	3	17
Onions.....	7	16
Lard.....	10	23

¹ The normal purchases were roughly estimated by calculating the share of the market that 15 million people would provide if their purchase habits were like those of 1935–36 nonfarm, nonrelief families having incomes of less than \$500. The percentage that blue-stamp purchases would be of the national market is taken from table 33. The figures have been rounded to the closest whole percent.

This method of estimating the increase in the low-income market probably understates the potentialities, since it is possible that some purchases of surplus commodities may be made with orange stamps or cash. Assuming that this comparison provides a minimum estimate, it appears that the expenditures by participating families for butter and eggs could be increased by an amount equal to at least 6 to 8 percent of total domestic consumption. For rice and cabbage, the net increase should be at least 3 to 5 percent. For dry beans, apples, peaches, peas, tomatoes, onions, and lard, the potential net increase should be at least 9 to 14 percent. For prunes and raisins, it should be 23 to 26 percent.

What the corresponding benefits to growers would be cannot be satisfactorily estimated, for they depend for each commodity on the elasticity of nonparticipants' demand and there are no reliable data on this point. But it is obvious that if the plan were placed on a national basis the increases in demand for most surplus commodities would be substantial.

SUMMARY AND CONCLUSIONS REGARDING POTENTIALITIES

In this chapter some first estimates of the potentialities of the Food Stamp Plan are

presented. They are necessarily tentative and are rough approximations only. They do demonstrate that the Food Stamp Plan can provide a very substantial aid to farmers while materially improving the welfare of the participants. A program of national scope, involving expenditures of about 400 million dollars, would bring about a significant increase in farm income as a whole and especially in returns to particular groups of producers. On a more restricted basis, the benefits cannot be so great. The stamp plan program must be increased substantially above its present extent if it is to be a major factor in meeting some of our farm problems.

Appendix

A.—ANALYSIS OF NET EFFECT OF BLUE-STAMP EXPENDITURES ON LOW-INCOME DEMAND⁴⁰

In pages 38 to 46 the problem of substitution was discussed. The writers pointed out that in order to obtain maximum effectiveness it is essential that as much of the blue-stamp subsidy as possible shall represent a net increase over the former food expenditures of participants. The effectiveness of the orange-stamp requirement in assuring a net increase was discussed, and it was concluded that at least 75 percent of the blue-stamp expenditures represent a net increase in consumption of all food.

This problem of substitution is important with respect not only to increases in the consumption of all foods but to increases in the consumption of the individual surplus commodities. This appendix outlines the analytic approach that is being made to the problem and indicates certain general conclusions that may be drawn.

As the program is designed primarily to increase low-income demand for food and especially to increase the demand for surplus commodities among low-income families, the main problem is to secure information on actual changes in demand and consumption in the low-income areas. Two basic approaches to the problem are being undertaken.

(1) A number of purchase records are being obtained from relief families covering total foods and individual commodities bought before and after the inauguration of the program. In this way conclusions are reached regarding the apparent effects of the program during the specific period covered. Sufficient

studies of this type have not yet been completed to permit conclusions to be drawn from them in this report.

(2) A sample of low-income stores is selected and information is obtained on total sales and sales of the surplus commodities, with and without blue stamps, before the inauguration of the program and for a period of 4 to 12 months after the beginning of the program. During the period covered by the report, the studies enumerated in table 35 were inaugurated.

In general, it may be said that, in order to obtain a net increase equal to the amount of the subsidy, the sales of all foods must increase when the program is inaugurated by an amount equal to the value of the blue stamps. If the increase is less than the value of the blue stamps, it may be assumed that part of the money that would have been used for the purchase of surplus commodities in the absence of the plan is being used for the purchase of other commodities. On the other hand, it is possible that sales of surplus commodities may be increased by more aggressive merchandizing, greater assortment, and more adequate supplies during the period of the program, so that sales to nonparticipants are increased and the net effect may be to increase low-income sales by more than the value of the blue stamps received in the store or group of stores.

Statistical measurements of the amount of increase involves the comparison of information regarding sales before the program and sales during the program. By expressing the sales of this sample of stores during the pro-

⁴⁰ Section A of the Appendix was prepared by the Economic Analysis Section, Surplus Marketing Administration, U. S. Department of Agriculture, Washington, D. C.

TABLE 35.—*Studies inaugurated during the early months of the Food Stamp Plan program*

City	Preprogram studies	Program studies	Stores included in—		Percentage of blue stamps in low-income sample
			Low-income localities	Other localities ¹	
	<i>Period</i>	<i>Period</i>	<i>Number</i>	<i>Number</i>	<i>Percent</i>
Rochester, N. Y.....	Apr. 17–May 13, 1939.....	May 16, 1939–May 17, 1940.....	13–18	7	3– 8
Dayton, Ohio.....	May 1–May 31, 1939.....	June 5–Dec. 11, 1939.....	10–12	5–7	4– 8
Seattle, Wash.....	July 1939.....	July 3–Dec. 16, 1939.....	6–17	4–9	3– 8
Birmingham, Ala.....	July 1939.....	July 29, 1939–July 31, 1940.....	22	5–6	6–12
Shawnee, Okla.....	July 1939.....	Aug. 14, 1939–Apr. 20, 1940.....	11–12	8	12–21
Des Moines, Iowa.....	July 3–Aug. 19, 1939.....	Aug. 21, 1939–May 25, 1940.....	10	3	6–18

¹ Variations in the sales of other income stores indicate the effect of variables other than the blue-stamp subsidy. Sales indexes of these stores are therefore used to adjust the low-income sales indexes for these other factors.

gram as a percentage of the average sales during the period before the inauguration of the Food Stamp Plan, it is possible to measure changes during the program. These changes may be due to several factors. They may be (1) the effect of the blue-stamp subsidy, (2) the effect of changes in consumer-purchasing power, (3) the effect of seasonal changes in supply and consumption, or (4) the effect of other variable factors. As so many variables are involved, it becomes necessary to devise a method of controlling all variable factors except the effect of the blue-stamp subsidy.

In order to provide a control, reports have been collected from a sample of 5 to 10 stores that did not receive large amounts of blue stamps. It is assumed that the effect of all variables except the blue-stamp subsidy will be reflected in the changes in sales of these "control" stores and that, except for increases due to blue stamps, changes in the sales of surplus commodities in the control stores will be comparable with changes in the sales of these commodities in the stores that do appreciable amounts of blue-stamp business.

On the whole, the program data in the sales studies were more accurate than preprogram information. From many stores, the preprogram information could be obtained only from purchase invoices or shipment records. Estimates of preprogram sales from such data could not allow for inventory changes. This difficulty was not

especially significant for the more perishable commodities, like butter and eggs, or for total dollar sales, but for the nonperishables, like flour, prunes, beans, and corn meal, it was evident that the shipment or purchase records were frequently not a satisfactory base from which to measure increases in sales during the program. This difficulty is now being overcome by obtaining actual records for a period of 1 month or longer before the opening of the Food Stamp Plan.

For some commodities, such as tomatoes, cabbage, pears, and peaches, there is a pronounced seasonal variation in supply, price, and quantities purchased. It may be argued that the demand for these commodities is not the same in low-income stores that handle large amounts of blue stamps as it is in the control stores that do little stamp business and therefore serve customers whose incomes are relatively high. If this is the case, seasonal variation will probably be greater in low-income stores than in others. To correct for this difficulty, plans are being made to obtain information from low-income stores in areas adjacent to the area being studied, but not covered by the stamp-plan program. Insofar as this difference in demand exists, it makes conclusions difficult, especially for some fruits and vegetables which have particularly short seasons. For other commodities, to include enough weeks of experience to cover an entire seasonal

pattern (high and low) would eliminate the difficulty.

The preliminary analysis completed to date indicates that the method outlined will probably be fairly adequate. Progress so far in collecting adequate information over a considerable period of time is very encouraging. Preliminary conclusions are as follows:

(1) The effect of the blue-stamp subsidy in low-income areas is usually quite evident, indicating that increases even larger than the value of the subsidy may be obtained, especially when the plan first begins in a particular area, because of the stimulation of demand by publicity attached to the opening of the stamp-plan program in a city and more aggressive merchandizing on the part of merchants.

(2) Increases in total food sales are probably equal to or nearly equal to the value of the blue-stamp subsidy in most areas.

(3) Sales of butter, eggs, beans, and rice were probably increased by at least 75 percent of the value of the blue stamps.

(4) Sales of fresh fruits and vegetables—commodities which relief people are usually unable to purchase in appreciable quantity—were probably increased by something like the full amount of the blue stamps.

(5) Sales of flour, corn meal, and pork—commodities which normally make up the largest part of the diet of low-income people—probably are not increased by the full amount of the blue stamps. Preliminary information indicates that increases of these commodities may amount to from one-half to three-quarters of the value of the blue stamps expended.

(6) The increases in the purchases of the various individual surplus commodities are

affected by changes in the surplus list.

(7) The amount of the increase varies among areas because of differences in relief standards, dietary habits, and normal consumption of surplus commodities.

Some indication of the changes are shown from the Rochester study, which is summarized in table 36.

TABLE 36.—Indices of sales of total food and of specified surplus commodities in low-income stores and other stores in Rochester, N. Y., Apr. 13, 1939–May 11, 1940 ¹

Commodity	Sales in low-income areas—		Ad-justed index of sales in other stores ²	Per-centage low-income sales were above other sales	Increase in low-income sales as percentage of blue-stamp expenditures
	Includ-ing those for blue stamps	For blue stamps			
Total food.....	115	10	104	11	110
Butter.....	124	35	102	22	63
Eggs.....	122	52	88	34	65
Flour.....	243	119	114	129	108
Rice.....	130	65	88	42	65
Dry beans.....	175	84	110	65	77
Prunes.....	102	47	58	44	94

¹ Preprogram period Apr. 6–May 13, 1939=100.

² There were a few blue-stamp sales in the upper and intermediate income areas, so the index in the upper and intermediate income stores was adjusted upward to allow for the possible substitution of blue stamps for cash in these stores.

The tentative conclusions presented here are necessarily based on preliminary work inaugurated with considerable speed and before many of the problems of data collection and analytic technique had been worked out. A new set of studies—especially those in Akron, Ohio, beginning December 16; Memphis, Tenn., beginning December 9; and others in Oakland, Calif., Chicago, Ill., and Brooklyn, N. Y.—will make it possible to obtain more accurate and complete information.

B.—WHOLESALE FOOD SALES IN THE EXPERIMENTAL CITIES BEFORE AND DURING OPERATION OF THE STAMP PLAN

Considerable interest has been shown in what effect the Food Stamp Plan has had on total food sales in the areas where it has

been operating. An effort was therefore made in connection with this study to obtain records from food wholesalers as to their

food sales for a period of time before and during the operation of the plan. As the value of the blue stamps is small in relation to total food sales, it is obvious that the effect of the plan could easily be lost in the interplay of other market factors. Changes in the general market situation, together with difficulties of getting accurate sales data, were such that the findings do not provide a very satisfactory basis for any conclusions regarding the effect of the stamp plan on total food sales.

Figure 8 (see also table 37) shows the total value of food (surplus and nonsurplus items) sold by leading wholesalers and chain-store systems in four experimental cities for periods before and during the operation of the stamp plan. These firms had a large proportion of

the total food business in their respective territories, so that their sales provide the best available data as to the over-all trend of food sales in the stamp cities.⁴¹

Figure 8 indicates that in two of the cities (Rochester and Dayton) total food sales fell off in the months immediately following the inauguration of the plan; whereas in Pottawatomie County, Okla., and Des Moines the sales increased. These figures for sales should not be taken to mean that the plan had no effect in increasing food sales in the first two cities nor that the increase noted in the last two cities can be attributed to it.

⁴¹ Some of the firms, particularly those doing business in Pottawatomie County, Okla., made sales in areas adjacent to the stamp-plan cities, so that to this extent their sales would not be expected to reflect the effect of the plan. In other cities, however, most of the sales were made within the areas affected by the plan.

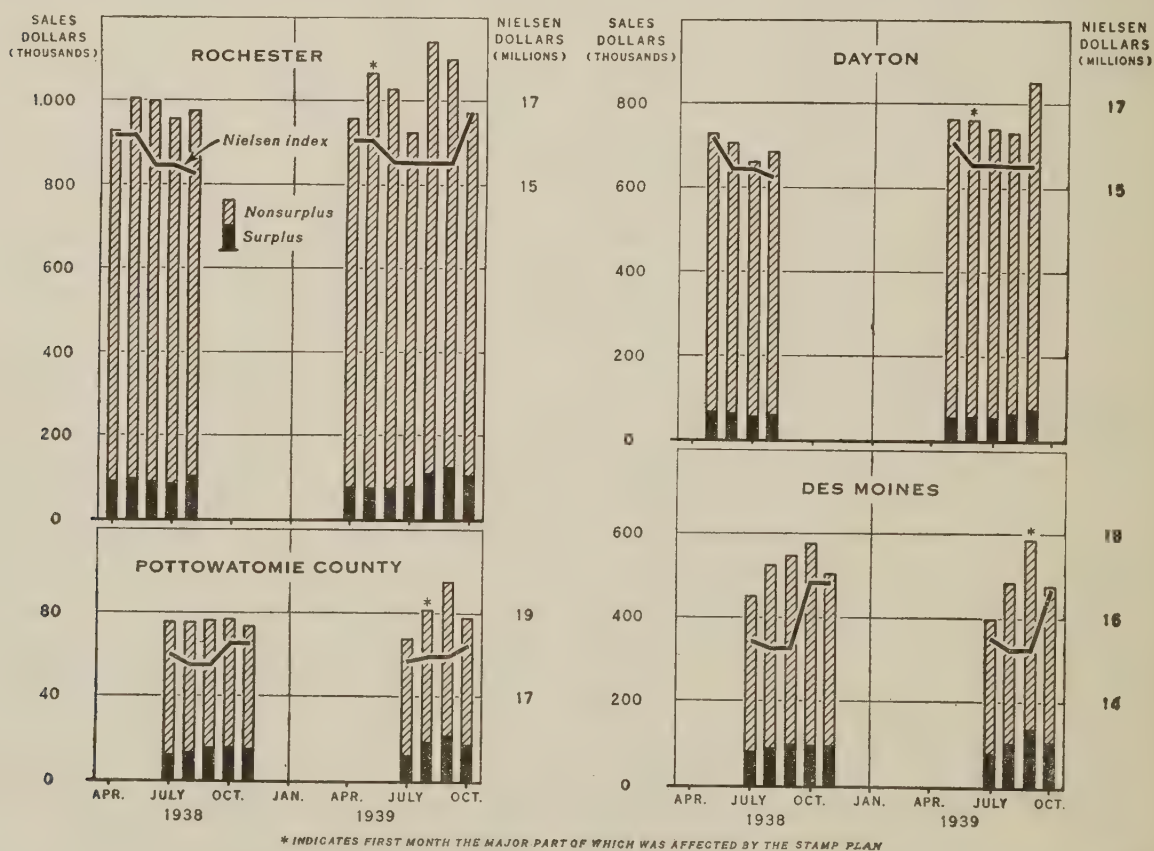


FIGURE 8.—Wholesale value of all food sales of wholesalers in four stamp-plan cities, divided between sales of surplus commodities and nonsurplus commodities, and the Nielsen Food Index, 1938 and 1939. Effects of the introduction of the stamp plan were masked by other more important influences in the market.

TABLE 37.—*Wholesale value of total, surplus-commodity, and nonsurplus-commodity sales¹ of food by wholesalers in four stamp-plan cities,² and the Nielsen Food Index, 1938 and 1939³*

City and type of wholesale-value sums	1938							
	April	May	June	July	August	September	October	November
Rochester:	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
All food sales	927, 113	1, 007, 812	999, 974	955, 606	975, 906			
Surplus-food sales	91, 401	98, 624	90, 451	85, 570	103, 528			
Nonsurplus-food sales	835, 712	909, 188	909, 523	870, 036	872, 378			
Dayton:								
All food sales		728, 845	707, 863	661, 935	686, 386			
Surplus-food sales		67, 704	62, 403	57, 215	59, 549			
Nonsurplus-food sales		661, 141	645, 460	604, 720	626, 837			
Pottowatomie County, Okla.:⁴								
All food sales				75, 893	75, 661	76, 064	76, 916	73, 578
Surplus-food sales				12, 903	13, 871	15, 769	15, 711	15, 571
Nonsurplus-food sales				62, 990	61, 790	60, 295	61, 205	58, 007
Des Moines:								
All food sales				448, 168	524, 670	544, 011	578, 513	501, 731
Surplus-food sales				79, 568	90, 842	99, 116	96, 474	96, 117
Nonsurplus-food sales				368, 600	433, 828	444, 895	482, 039	405, 614
Nielsen Food Index:⁴	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
Class B cities	16, 184	16, 184	15, 422	15, 422	15, 256	15, 256	16, 833	16, 833
Class C cities	18, 128	18, 128	17, 983	17, 983	17, 714	17, 714	18, 268	18, 268

City and type of wholesale-value sums	1939						
	April	May	June	July	August	September	October
Rochester:	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
All food sales	957, 917	1, 064, 971	1, 028, 933	922, 478	1, 140, 814	1, 098, 679	970, 110
Surplus-food sales	78, 475	77, 317	75, 634	81, 663	111, 656	125, 980	104, 802
Nonsurplus-food sales	879, 442	987, 654	953, 299	840, 815	1, 029, 158	972, 699	865, 308
Dayton:							
All food sales		765, 016	761, 210	740, 820	730, 313	756, 600	
Surplus-food sales		55, 657	57, 559	55, 101	63, 063	72, 297	
Nonsurplus-food sales		709, 359	703, 651	685, 719	667, 250	684, 303	
Pottowatomie County, Okla.:⁴							
All food sales				67, 233	81, 783	94, 808	77, 811
Surplus-food sales				12, 059	18, 997	22, 029	17, 698
Nonsurplus-food sales				55, 174	62, 786	72, 779	60, 113
Des Moines:							
All food sales				399, 396	483, 855	588, 658	478, 621
Surplus-food sales				78, 046	100, 417	137, 297	100, 626
Nonsurplus-food sales				321, 350	383, 438	451, 361	377, 995
Nielsen Food Index:⁴	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
Class B cities	16, 074	16, 074	15, 552	15, 552	15, 526	15, 526	
Class C cities	18, 237	18, 237	17, 813	17, 813	17, 988	17, 988	

¹ Surplus food-sales figures included only those commodities which were on all the first 3 stamp-plan surplus lists: Butter, eggs, prunes, dried beans, wheat flour, graham flour, and corn meal, with the exception of those for Des Moines and Pottowatomie County, for which there were no data on eggs. The first stamp-plan surplus-food list, effective May 16, had 9 commodities listed; the second list, effective July 16, had 14 commodities; and the third, effective October 1, had 13 commodities. Sales figures for any other food in the first 3 lists were not included in the figures for nonsurplus-food sales.

² Dates of inauguration of the stamp plan in these cities were: Rochester, May 16; Dayton, June 5; Pottowatomie County, Aug. 16; and Des Moines, Aug. 23, 1939.

³ The wholesale sample for this analysis consisted of the following number of firms in each city: Rochester, 12; Dayton, 8; Pottowatomie County, 11; and Des Moines, 14. Data derived from these firms may not represent total wholesale movement of food commodities in each city as certain institutional factors peculiar to the sample firms may have affected their sales. The stamp plan may have been only one of several factors affecting food sales in these cities. The general trend of food sales is indicated by the Nielsen Food Index.

⁴ The Nielsen Food Index statistics are based on the food sales of a large sample of chain and independent retailers throughout the United States. As each figure is for a bimonthly period, it has been halved for every corresponding month in this table. The index for class B cities represents total sales of cities of 100,000 to 1,000,000 population and is comparable with the total sales figures for Rochester, Dayton, and Des Moines. The index for class C cities of from 10,000 to 100,000 population is comparable with the total sales figures for Pottowatomie County.

In all cases, the effects of the plan on total food sales appear to have been obscured by other factors—in Rochester and Dayton by a seasonal decline in food sales and in the other cities by the war boom in September. That sales of wholesalers will vary sharply from month to month because of the size and timing of transactions is another complicating factor.

Inferences based on changes in the volume of food sales upon the inauguration of the plan in individual cities are likely to be not only inaccurate, but actually misleading as to the real economic effect of the plan. The

fundamental principle of the Food Stamp Plan is that it tends to increase farm income by diverting part of the available supply from high-income to low-income consumers. If the total supply of a commodity is fixed, the plan could not immediately increase the total supply marketed even if it were operating on a national basis. So long as it is operating in only a few cities, some increase in food sales in these particular cities may be expected. Exactly how much this increase has amounted to cannot be ascertained from any data now available.

C.—METHODS USED BY THE BUREAU OF HOME ECONOMICS IN STUDYING THE EFFECTS OF THE STAMP PLAN ON DIETS OF LOW-INCOME FAMILIES IN DAYTON, OHIO, AUGUST-SEPTEMBER 1939

The sample of families included in the Dayton study was made by the use of three lists or registers: Lists of certified applicants for participation in the Food Stamp Plan in the files of the city office of the Surplus Marketing Administration; W. P. A. pay rolls (with special permission from Federal and State officials); and lists of families that had applied to the city's Department of Public Assistance for relief but were awaiting certification. All the families included on these lists that also corresponded to the eligibility requirements described on page 67 were interviewed (100-percent coverage). There was, of course, duplication on W. P. A. pay rolls and in S. M. A. files that had to be eliminated. Also the latter register included families participating in the stamp plan that were recipients of old-age assistance, aid to dependent children, and aid to the blind; these names were omitted because these groups were not to be included in this study.

The files of the Surplus Marketing Administration served chiefly to locate participants with W. P. A. employment and participants that received grocery vouchers, but they helped also in locating one group of nonparticipants—those that once had been eligible for participation but were no longer so, having

been dropped from W. P. A. or relief rolls too recently to have been removed from S. M. A. files. Pay rolls of W. P. A. were used chiefly to locate a nonparticipating group with W. P. A. employment. The list of families that had applied for relief to the city's welfare department but were not yet receiving aid helped to locate a third group of nonparticipants.

Access could not be obtained to lists of clients receiving assistance from private welfare agencies, and no attempt was made to obtain the cooperation of nonrelief, privately employed families except those that had obtained employment so recently that their names still were on W. P. A. or S. M. A. rolls. All families—participants and nonparticipants—included in the survey had once been certified by a public agency as in need of W. P. A. employment or direct aid or had made application for such certification.

METHOD OF OBTAINING INFORMATION

Field workers, trained to help housewives to recall the facts needed to fill the schedules, interviewed each family and obtained in accordance with detailed and written instructions the family's best estimate of its consumption of food during the preceding 7-day period, the persons fed from the family's food

supply, and family income (in money and in kind) for the preceding month.

Data obtained by this method are, of course, subject to errors of both overestimation and underestimation, due to faulty memory or to poor quantitative judgment on the part of the person reporting. Hence, the schedules were carefully edited for consistency and reasonableness. Previous experience with records and with estimates of food consumption—both collected and edited with proper care—has demonstrated that averages based on estimates of food consumption made by sufficiently large and homogeneous groups of families are fairly reproducible. Less reliance, however, can be placed on data from a single family if they are obtained by interview rather than from supervised records kept from day to day.

Schedules were rejected in the office if the field worker reported the disposition on the part of the reporter to withhold information, or to falsify replies, or if it was evident from the schedule that the reporter was unable to give estimates that were accurate enough to be of use. Schedules were regarded as of doubtful accuracy if the food-energy value of the quantities reported exceeded 3,500 calories per person per day or fell below 2,000 calories per person per day; in all such cases the schedules were referred to the supervisor for decision as to disposal after a study of all the evidence available regarding each family's income, food-energy needs, and estimates of consumption. Schedules reporting food valued at less than \$1 per person per week or more than \$3 per person per week also were scrutinized with special care to make sure of their probable validity. Families whose reports failed to show the consumption of any major group of food were interviewed a second time to verify the report; unless verification was possible, the schedule was rejected.

DATA OBTAINED FOR ANALYSIS

Altogether, schedules showing income, household composition, and food consump-

tion were filled for 1,582 households. Many families participating in the stamp plan were ineligible for the study because of the administrative decision to omit those receiving Social Security benefits, as well as those ineligible because of the color and household-composition requirements that had been set up. The proportion of the total number interviewed that were eligible but that refused to cooperate in filling a schedule was less than 6 percent.

Data on income and household composition, regarded as reliable, were obtained from 1,561 households—699 participating on the orange- and blue-stamp basis; 526 participating on the grocery-voucher, blue-stamp basis, and 336 nonparticipating households. From these were obtained 1,382 schedules regarded as suitable source material for a study of food consumption and expenditures: 573 from orange- and blue-stamp participants; 503 from grocery-voucher, blue-stamp participants; and 306 from nonparticipants. Thus schedules were rejected because of internal evidence of untrustworthiness from 18 percent of the orange- and blue-stamp participants, 4 percent of the grocery-voucher, blue-stamp participants, and 9 percent from the nonparticipants.

A relatively large proportion of the schedules rejected were from small families, and the most frequent cause for rejection was an apparent overestimate of consumption. Overestimates, each small in quantity but on a number of items, would of course be relatively more important in the total (and hence more readily detectable) among small families than large. An overestimate of one-half of a loaf of bread, for example, would be considerable if the total number of loaves for the week were but 2 but would be comparatively unimportant if the total were 10.

If overestimation were a general trait, but readily detectable only among small families and among those with a comparatively high level of consumption, the rejections that would follow the editing procedures adopted in this study would tend to minimize differ-

TABLE 38.—*Distribution by household composition and family income per month of households participating with orange and blue stamps or grocery vouchers and blue stamps and nonparticipating households of all families cooperating, Dayton, Ohio, August–September 1939*

Household composition and participation	All households	Households with income ¹ in a month of—				
		Less than \$25	From \$25 to \$49	From \$50 to \$74	From \$75 to \$99	\$100 or more
	Number	Number	Number	Number	Number	Number
All households cooperating in study.....	1,561	110	406	664	237	144
Participating.....	1,225	65	355	537	183	85
Orange and blue stamps.....	699	9	65	395	157	73
Grocery vouchers and blue stamps.....	526	56	290	142	26	12
Nonparticipating.....	336	45	51	127	54	59
Cooperating households of—						
2 persons 16 or more years of age and no others:						
Participating.....	310	34	122	112	30	12
Orange and blue stamps.....	168	3	24	100	29	12
Grocery vouchers and blue stamps.....	142	31	98	12	1	0
Nonparticipating.....	110	28	19	39	17	7
3 or 4 persons: 2 persons 16 or more years of age, and 1 or 2 persons under 16:						
Participating.....	456	24	140	208	64	20
Orange and blue stamps.....	275	4	26	169	57	19
Grocery vouchers and blue stamps.....	181	20	114	39	7	1
Nonparticipating.....	121	11	19	44	24	23
5, 6, or 7 persons: At least 2, 16 or more years of age and 1 under 16 years, and 2 to 4 others:						
Participating.....	459	7	93	217	89	53
Orange and blue stamps.....	256	2	15	126	71	42
Grocery vouchers and blue stamps.....	203	5	78	91	18	11
Nonparticipating.....	105	6	13	44	13	29

¹ Includes money and nonmoney income (except value of blue stamps received).

ences between the consumption of the two types of participants and between participants on the one hand and nonparticipants on the other. (As already noted, total rejections on all bases were 18, 4, and 9 percent, respectively, for the three groups.) It is reasonable to assume, however, that families of relatively low economic status may be more aware of the quantitative aspects of their food purchases and consumption than are those who are not forced by economic necessity to watch expenditures closely, and hence the former may be better fitted to give accurate estimates.

Table 38 gives the household composition and family income of all households cooperating in the study.

In comparing matched groups (cells) of participating and nonparticipating households, all cells were made to consist of the

same number of schedules. If one cell included more schedules than the other, the larger number was reduced to the smaller by eliminating the extra schedules according to the following instructions: Arrange the schedules by date of schedule collection, divide the total number by the number to be eliminated, and let the first schedules to be drawn be determined by the proportion to be eliminated. Thus if there are 90 schedules and 10, or one-ninth, were to be omitted, the ninth, eighteenth, twenty-seventh, etc., schedule would be drawn for omission. In order to learn the variations within each cell as well as the variation between two cells to be compared, two subtotals as well as a grand total were obtained for each cell and certain tests of the significance of differences within cells and between cells were made.

